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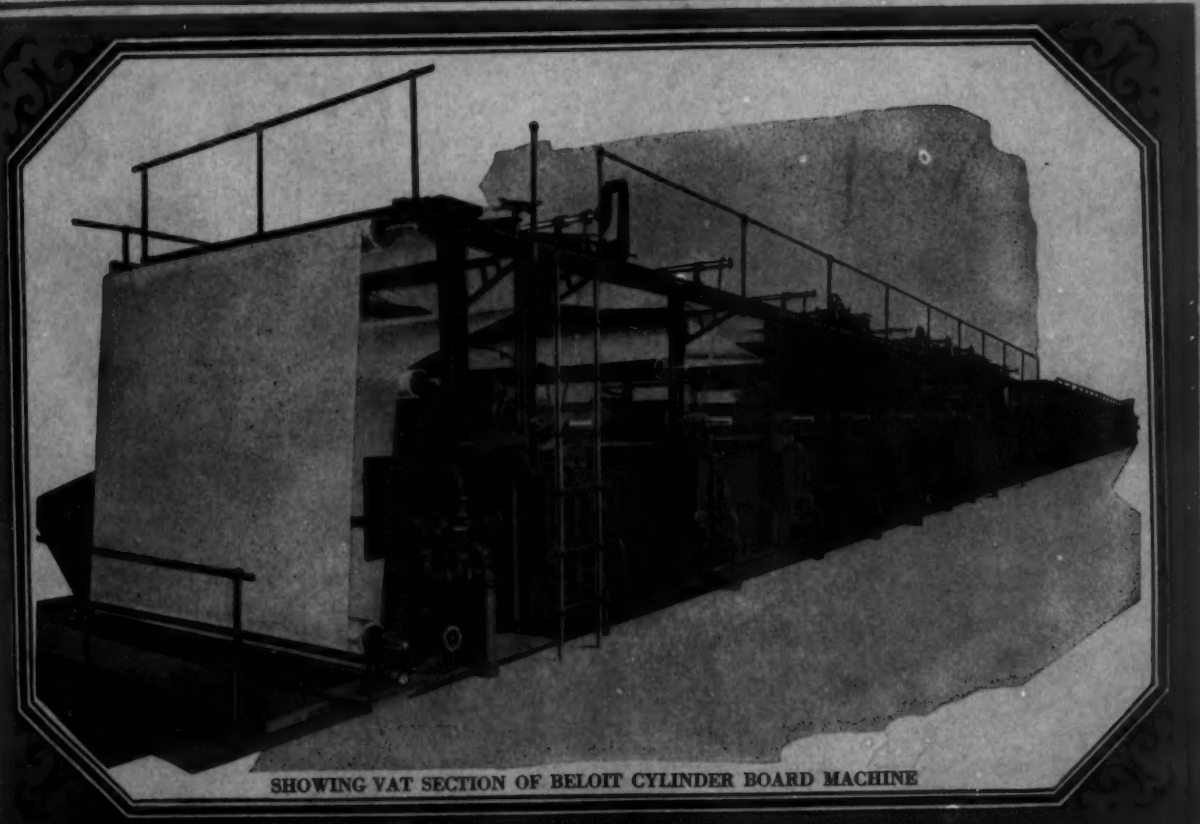
PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.
10 EAST 39th ST., NEW YORK

Vol. LXXXVIII, No. 10 MARCH 7, 1929 United States, Per Annum, $4.00 Canada and Foreign Countries in Postal Union, $6.00



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Entered as second class matter August 12, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa.
EXECUTIVE AND EDITORIAL OFFICES: 10 East 39th Street, NEW YORK CITY. FIFTY-SEVENTH YEAR CHICAGO, 123 West Madison Street, Chicago, Ill.

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — J. BANNINGA, Secretary

Executive and Editorial Offices, 10 East 39th Street, New York
Chicago Office: 123 West Madison St.

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R. T. VANDERBILT CO. INC.
McNAMEE CLAY
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R. T. VANDERBILT CO. INC.
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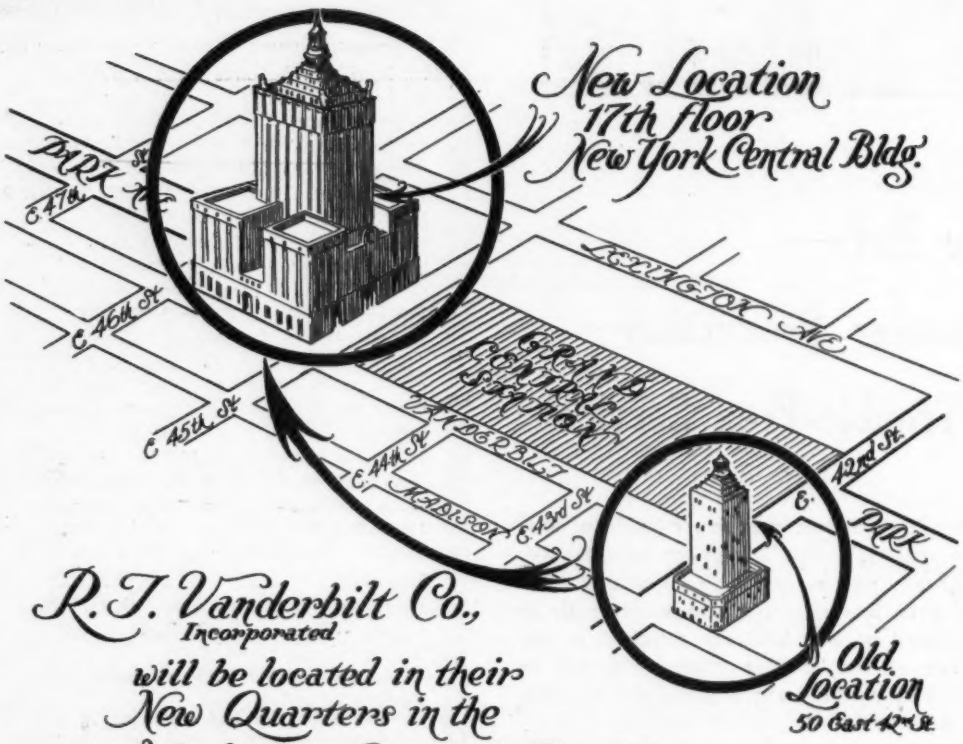

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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXVIII, No. 10 — Thursday, March 7, 1929

St. Regis Co. Acquires Bates Valve Bag Corp.

Deal Brings Into St. Regis Group Concern With Assets of Nearly $10,000,000 and Largest Single Factor in Manufacture of Paper Valve Bags—Present Plans Do Not Contemplate Public Financing—Other Products of Bates Corporation Include Wire Ties for Cloth Bags, Re-tying Machines, and Closing Machines for Open-End Bags

Acquisition of the business of the Bates Valve Bag Corporation by the St. Regis Paper Company was consummated yesterday, bringing into the St. Regis group a concern with total assets of nearly $10,000,000. The Bates corporation is the largest single factor in the manufacture of paper valve bags. F. L. Carlisle & Co., Inc., bankers for the St. Regis company, in announcing the completion of the deal, said that financial details of the transaction were now being worked out and would be made known later. Present plans do not contemplate any public financing in connection with the acquisition.

The Bates Valve Bag Corporation and its subsidiaries own plants for the manufacture of paper bags at Los Angeles, Cal.; Birmingham, Ala.; Toledo, Ohio.; Nazareth and Oakmont, Pa.; Covington, Va.; Menominee, Mich.; Dryden, Ontario; and Three Rivers, Quebec. The corporation has originated and developed a patented system of packing cement, lime, plaster, gypsum and other rock products, also sugar, flour and fertilizer, which includes not only patented automatic machines for packing, but also a new type of valve bag for use in connection with the packing of materials on the company's machines.

Since 1910, substantially the entire cement production of the United States has been packed by Bates machines and since 1924, the corporation has been the principal manufacturer of multi-wall sewed-end paper valve bags. Other products include wire ties for cloth bags, re-tying machines and closing machines for open-end bags. The corporation leases the use of its packing machines to cement and other manufacturers and also licenses the manufacture and sale of its patented valve bag by certain paper manufacturers.

F. L. Carlisle & Co., Inc., are also bankers for the Taggart Corporation, second largest producer of multi-wall bags in the United States. Its paper and bag manufacturing plants are located at Watertown, Herrings, Carthage and Oswego, N. Y. Combined production of the Bates and Taggart corporations for the current year is estimated at more than 250,000,000 multi-wall paper bags.

Acquisition of the Bates corporation by the St. Regis company is expected to prove mutually advantageous. St. Regis, founded in 1899 and with total assets of more than $50,000,000 today, ranks as one of the largest producers of paper in the country, while the Bates corporation has always purchased paper required for the manufacture of bags from outside sources. The eight manufacturing plants of the St. Regis company in Northern New York have a total capacity of 160,000 tons of paper, 175,000 tons of groundwood, 28,000 tons of sulphite and 50,000,000 feet of fiber insulating board. The company owns over 650,000 acres of timberlands in the United States and Canada and is largely interested in public utility companies, holding more than 52 per cent of the outstanding capital stock of Northeastern Power Corporation, an investment carried on its books at approximately $22,000,000 and having a current market value of more than $80,000,000.

The multi-wall bag industry has grown rapidly in recent years, an indication of its future possibilities being supplied by the fact that in 1928 only about 30 per cent of the total production of cement was packed in paper valve bags. It is expected that the business of the Bates company will be carried on by a wholly-owned subsidiary of the St. Regis Paper Company, continuing the name of the Bates Valve Bag Corporation.

Enlarging Kipawa Rayon Pulp Mill

The Canadian International Paper Company is enlarging its Kipawa mill from 75,000 tons to 100,000 tons a year of rayon sulphite wood cellulose. Located on the Ottawa River, 230 miles above the City of Ottawa, the Kipawa mill receives its wood from timberland reserves aggregating 5,200 square miles, and its power from Kipawa hydro-electric plant of the Gatineau Power Company, controlled by the Canadian Hydro-Electric Corporation, Ltd., a subsidiary of the International Paper and Power Company.

A large proportion of the total world's consumption of wood cellulose by manufacturers of rayon (artificial silk) is supplied from Kipawa mill—one of the original Riordon properties. Its expansion is necessitated by the continually increasing demand for its product. The company does not manufacture rayon yarns for sale, its sole interest in the rayon field being the production and marketing of Kipawa sulphite wood cellulose for making high-grade rayon.

Luzerne Paper Co. Improves Plant

[FROM OUR REGULAR CORRESPONDENT]

HADLEY, N. Y., March 2, 1929.—Extensive improvements are under way at the plant of the Luzerne Paper Company which will allow of a substantial increase in production. Considerable new electrically driven machinery and other equipment is being placed in position and it is understood that the working force will also be enlarged. A force of workmen from Boston are placing the new machinery in position. The company has been running at capacity for some time and only recently a night shift was inaugurated.

Fraser Companies Get Sears-Roebuck Contract

Leading Mail Order House Arranges For Supply of Catalog Paper Requirements For Next Ten Years—Total Capacity of Fraser Mills Now Amounts to 450 Tons Per Day of Fine and Catalog Papers, Paper Board, and Unbleached Sulphite Pulp

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 4, 1929.—An interesting revelation in the annual report of the Fraser Companies, Ltd., is that they have signed a contract with Sears, Roebuck & Co., the great mail order house of Chicago, covering the supply of their requirements of catalog paper for a period of ten years. This contract, it is declared, "will gradually absorb the entire tonnage of your existing catalog paper machine and will probably require the installation of an additional machine to come into operation in 1930." All the plants of Fraser Companies are now coordinated, fitting into the existing customs regulations of the United States, as a result of which pulp manufactured in the Edmundston mill on the Canadian side is conveyed (under the river) in a most economical manner to the paper mill at Madawaska across the border, free of any customs duty. There it is manufactured into paper which has the entire American market at its disposal, from which it would have been practically debarred owing to the "duty," had the various lines of paper been manufactured on the Canadian side. The total capacity of the three mills of the Company, Edmundston, Madawaska and Chatham now amounts to approximately 450 tons per day of fine and catalog papers, paper board and unbleached sulphite pulp.

Operating profits for 1928 were $1,765,154, an increase of $92,200 over those of 1927. This is considered very satisfactory seeing that it has occurred during a period of wide expansion plans, the full effects of which are not yet apparent, though they will be in the immediate future.

Bathurst's New Machine

At a meeting of the directors of the Bathurst Power and Paper Company it was reported that the second news print machine of 80 tons capacity is expected to be in operation by April 1. A dividend of 25 cents a share on the class "A" common stock was declared.

A. R. Graustein resigned his seat on the board as president and director and Brig. Gen. J. B. White was elected president with A. E. McLean, vice-president and general manager, and H. J. Webb, vice-president and treasurer. The other directors are as follows: A. J. Nesbitt, P. A. Thomson, J. B. Woodyatt and G. H. Montgomery, K.C.

The annual meeting of the company will be held on Wednesday, March 20.

Charles Walmsley & Co. (Canada)

An interesting sidelight on the transfer of the control of Charles Walmsley & Co. (Canada), manufacturers of paper-making machinery, is contained in the annual report of the Dominion Engineering Works, Ltd., of Montreal. This report says:

"Towards the close of the year representations were made to your company by those in control of Chas. Walmsley & Co. (Canada), Ltd., that actions had been instituted against that company which would result in liquidation, bringing serious loss to the customers whose work was in progress and to the Sir W. G. Armstrong-Whitworth Company which had guaranteed the principal and interest of the bonds of Chas. Walmsley & Co. (Canada), Ltd. As a result of the negotiations your company agreed to protect the Armstrong-Whitworth Company against its undertaking on the said bonds (amounting to $898,000), and undertook the payment of all trade liabilities and the completion of all orders of Chas. Walmsley & Co. (Canada). The consideration received by your company was $250,000 and all the issued shares of Chas. Walmsley & Co. (Canada), Ltd. This money is shown on the balance sheet as a reserve against the contingent liability of the guarantee to Sir W. G. Armstrong-Whitworth Company.

"Chas. Walmsley & Co. (Canada), is principally a manufacturer of paper-making machinery, holding exclusive Canadian licenses from the well-known firm of Chas. Walmsley Company of Bury, England. It had contracts in progress at the time of the negotiations for:

"Two 234 in. Minton Vacuum Dryer Machines for the Riverbend Mill of Price Bros. & Co.; a book-paper machine for the Rolland Paper Company; remodeling of other paper-machines; six continuous wood grinders, vacuum pumps, beaters and similar lines of manufacture.

"The arrangements above outlined allowed Chas. Walmsley & Co. (Canada) to continue in operation without interruption.

"The operations of Chas. Walmsley & Co. (Canada) have not conflicted with the operations of your company in the past and will not conflict in the future. At the present time both companies have orders on their books which will keep them fully occupied for some time and it is hoped this condition may continue.

Brompton Company's Statement

Earnings of $3.56 a share on the 300,000 no par value common shares now outstanding are shown in the annual financial statement of Brompton Pulp and Paper Company for the year ending December 31, 1928.

The consolidated profit and loss account of Brompton and its subsidiary, the Claremont Paper Company, shows gross operating profits for the year, before depreciation and other charges, of $1,655,396. Reserves for depreciation and income tax were maintained at a high figure, $585,865, leaving a balance of $1,069,531 available for the common stock.

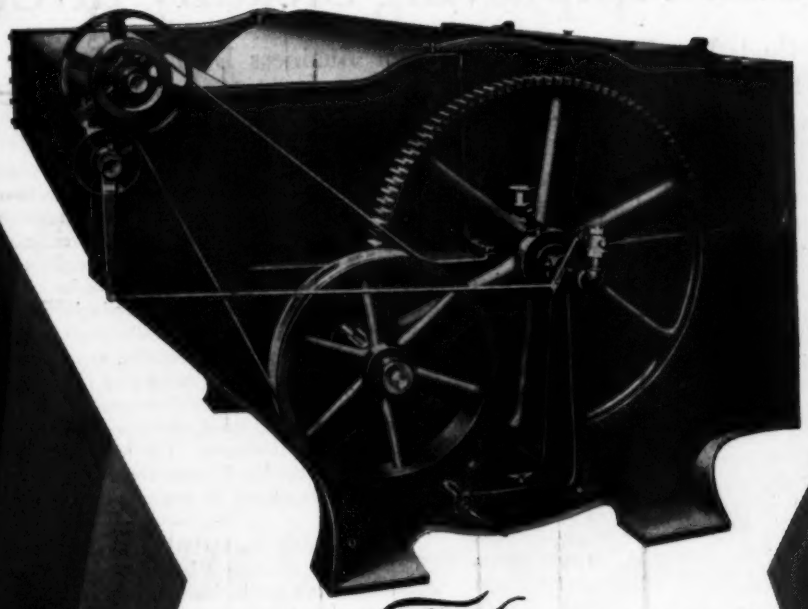
Appropriations were made from this balance for bond interest and preferred dividends on securities now redeemed amounting to $364,629, and dividends were paid on common stock, amounting to $375,000, leaving $329,902 carried to surplus.

It is understood that special nonrecurring charges of over $100,000 were met during the year and charged to operations, and when it is remembered that the Bromptonville mill was forced to close down during January, 1928, due to a freeze up, thus causing a material curtailment of production, the profit and loss statement is all the more favorable.

Tragic Death of Paper Man

Montreal was on Friday last, profoundly shocked to learn of the tragic death of Philip W. K. Robertson, assistant sales manager of the Riordon Sales Corporation, Ltd., and of his three-year-old daughter Phyllis. Mr. Robertson was found dead in his garage in the basement of his home. He had gone there to start his car, which had been laid up for the winter and succumbed to carbon monoxide fumes. His death was unknown to his family and as the car continued running the deadly fumes gradually crept into the house above and overcame his family. The daughter Phyllis was found by a maid dead on the floor while Mrs. Robertson and the five-year-old son Kenneth Robertson were unconscious. The maid was also affected by the fumes, and all three survivors were removed to the hospital.

Mr. Robertson was born in Mexico City and was educated at Trinity College School. Port Hope, Ont. Later he graduated from McGill University, Montreal. He had been with the Riordon firm for many years. A sister of Mrs. Robertson, Miss Ann Lockhart, lives in New York.



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The answer to the question "How can I get the fibre out of the white water at lowest cost?"

Let us prove it.

BIRD MACHINE COMPANY

South Walpole Massachusetts

Paper Demand Improving Steadily in Chicago

Excellent Selling Methods Result in Good Volume of Business Being Booked by Fine Paper Distributors—Wrapping Paper Continues to Move in Satisfactory Manner—Book and Cover Papers Steady—Continued Expansion of Trading Anticipated

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 4, 1929.—Chicago goes into the first week in March with conditions fairly bright for continuation of good business well on to and beyond the first quarter of the year. Lines of paper which were expected to enjoy an improved demand for the first quarter of 1929 are not likely to disappoint any of those who made the optimistic prophecies, for sales point to a continuance of improved conditions.

The fine paper market continues to improve slightly, with a good volume of business obtained by excellent selling methods. The coming of the first cornstalk bond paper, distributed by a well known Chicago paper house, has created some interest, and the sale of this new paper is being watched with interest.

The wrapping paper market is experiencing a good volume of trade as are book and cover papers, according to reports. The board market is coming along better as the first quarter of the year starts on its last lap with the price situation in the box board market reported as improved. Tissues are in good shape, with prices firm. Waste papers are experiencing an improvement all along the line.

Sullivan Addresses Paper Salesmen

With the re-electing of H. R. Knott, of the Eastern Manufacturing Company, as vice-president of the Chicago Division of the Salesmen's Association of the Paper Industry, the program introduced and carried through by Mr. Knott during the past twelve months will be continued throughout the coming year. This means that, at practically every Monday noon meeting, some representative of the paper and allied industries will speak to the salesmen on subjects of general interest to that group.

Last Monday Frank O. Sullivan, one of the foremost experts on offset work in the United States, was the speaker at the Hamilton Club. Mr. Sullivan gave an interesting and educational discussion of offset lithography and explained a number of valuable details from the standpoint of the salesmen in attendance.

Although future programs have not as yet been announced, Mr. Knott has made temporary plans for a number of features which will add greatly to the value and interest in the regular Monday meetings. The chairmen of the various committees of the local division of the Salesmen's association have not as yet been appointed. Mr. Knott is getting the warm cooperation of Jim Coy, who, after two successful years as president of the Salesmen's association, automatically retires from the candidacy in favor of Sam Knode, of the Albemarle Paper Company.

Farm Products Bond Launched

Bradner Smith & Co., 333 South Des Plaines, Chicago, recently sent out an announcement relative to their bringing to the market the first lot of paper made from cornstalk pulp and manufactured by the Hopper Paper Company of Taylorville, Ill. The paper is known as Farm Products Bond and its initial reception was so enthusiastic that the entire initial stock had been sold by noon of February 18, the day the announcement went out to the paper trade.

The announcement also carried with it the prices on Farm Products Bond which ranged from $8.75 to $10.25 per cwt., depending on the lots purchased. Envelopes to match were also quoted and at corresponding prices. With the announcement went the suggestion that those using the bond paper designate that the paper was cornstalk bond.

Chicago Paper Merchants to Dine

The Chicago Paper Association will hold its annual dinner and get-together for salesmen and executives of member firms of the association on the evening of March 12 in the Red Lacquer Room of the Palmer House, Monroe and State streets, Chicago. Although final arrangements for the program have not as yet been completed indications are that the entertainment will consist of talks by two or three well known figures in the industry, some lighter forms of diversion and of an excellent dinner.

Another Chicago concern will move its offices and warehouse to Chicago's West Side. The Bermingham & Prosser Company, now located at 160 North La Salle street, Chicago, will complete arrangements by May 1 for moving to the building now occupied by the Benjamin Electric Company at 120 South Sangamon street. The new location will give Bermingham & Prosser over 60,000 square feet of floor space which will be used for offices, warehouses and for salesrooms. The increased floor space will make it possible for the big Chicago concern to carry a larger number of items and to expand its business considerably.

Quick Installation at Dexter Plant

The erection of a new paper machine is a serious business, which cannot always be handled successfully as a rush order. It usually requires anywhere from six weeks to two months to put a modern paper machine together, and get it into operation.

What is regarded as a really remarkable record was recently established at the plant of C. H. Dexter & Sons, Inc., Windsor Locks, Conn., specialists on highest grade thin papers. The problem was to remove an old machine and replace it with a larger and more modern paper machine, with the least possible loss of time and production.

At 9:30 P.M., Saturday, February 2, the old machine ceased making paper. At 3 P. M., Sunday, February 3, the old machine was all torn down and moved out. At 6 P.M. the same day excavation was begun for a new foundation. At 7 A.M., Wednesday, February 6, erection of the new machine on the new foundation was started. By 7 P.M., Saturday, February 16, paper was being regularly produced on the new machine. Elapsed time, two weeks from stop to start.

The fact that everything went through at top speed, without a single hitch and no accidents, is credited to careful planning in advance, and to the interested and intelligent co-operation of the Dexter workmen, as well as the machine builders.

Smith Paper Co. To Add Machine

LEE, Mass., March 5, 1929.—The Lynch Brothers Brick Company of Holyoke has been given two contracts for additions to the plant of the Smith Paper Company here. There is to be a large addition to the Columbia mill on Columbia street for the installation of a new paper making machine. This will be built of brick and concrete and be similar to the one built about eight years ago. Engineer Patrick M. Lynch of the Company who built the last addition will have charge of these building operations which also include the remodeling of the machine room and machine of the Niagara mill for the manufacture of insulation paper.

Timothy Healy who has been employed as a machine tender for the past 20 years will be made superintendent of the Niagara mills. Benjamin E. Teale who is now manager of the Columbia and Valley mills will be manager also of the Niagara Mills. It is expected that the Niagara mill will be reopened about May 1.

At the present time there are about 350 hands employed in the four mills in operation by the Smith company and this number will be increased somewhat. The Centennial mill is not at present operated. Engineer and Mrs. Lynch will live at Lee for several months while the additions and changes are going on.

Free of Litigation

DOWNINGTON
KILBERRY PATENT SUCTION ROLL

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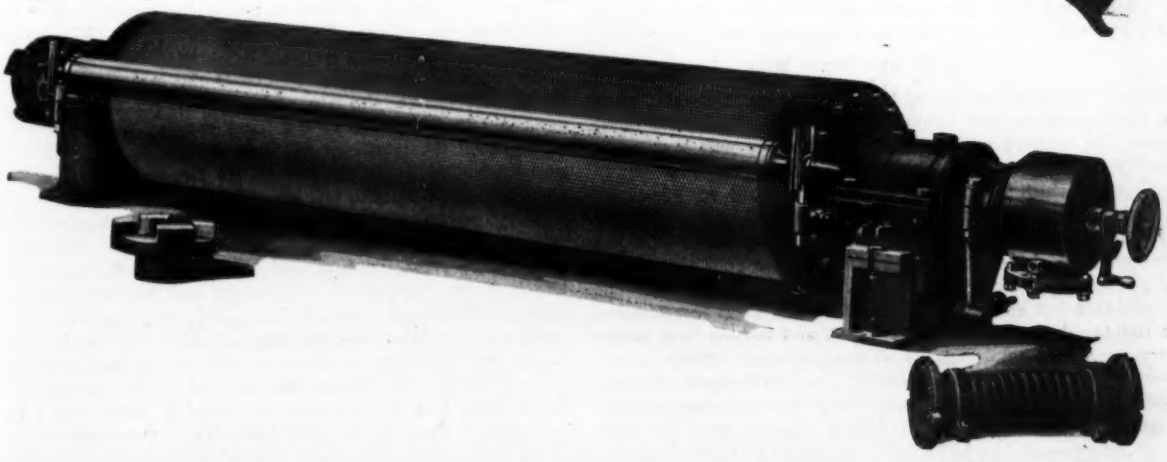
In a sweeping decision the U. S Court of Appeals removed the blanket of litigation which had hung over the Kilberry Suction Roll since it was first put on the market. Downingtown has introduced many important improvements in the Kilberry Patent Suction Roll and had to undergo the cost of expensive litigation to prove their right to give these improvements to the industry.

Installations in mills making many kinds of paper prove that Downingtown Roll meets every requirement of today. Literature and a copy of the Suction Roll Decision sent on request,—no obligation. *Downingtown Mfg. Co., Downingtown, Pa.*



Ontario Plans Eight Large Forest Reserves

Vast Area of 19,562 Square Miles to be Set Aside For Purpose of Carrying Out Latest European Forestry Methods—Government Formulates Hydro Policy for Northern Section of Province—Undertaking Would Benefit Pulp and Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 4, 1929.—Eight forest reserves totaling an area of 19,562 square miles will be set aside for the purpose of carrying out the latest European forestry methods in an effort to place Ontario's timberlands on a sustained yield basis, following the approval of the Ontario Legislature in committee of the whole this week on the proposed Provincial Forests Act introduced by the Minister of Lands and Forests. The bill, companion bill to the proposed Pulpwood Conservation Act, which had been hotly attacked by the Liberal Leader, earlier in the week, has also been the subject of much comment. Under its provisions the Government is taking a step forward in preserving the Crown timberlands, as it is intended that this will be an experiment, which, it is hoped, will eventuate in all the timberlands of the province being placed on a new basis.

Each of the eight areas will be under the direct supervision of a local forestry officer. It will be his duty to study the local conditions and develop methods of meeting the requirements of the area of which he has charge. In Toronto the chief forestry officer will have a central office from which he will direct operations and he will be answerable to the Department for the administration of the reserves. These will be known by the Eastern Provincial Forest; the Madawaska Reserve; the Temagami Reserve; the Mississauqua Reserve; the Georgian Bay Reserve; the Sidley Reserve; the Nipigon Reserve and the Kawartha Reserve. The three largest reserves will be the Temagami, with an area of 5,380 square miles; the Mississaugua, with 4,896 square miles, and the Nipigon with about 6,000 square miles. The forestry officer will be expected to make returns to the Department and he will be expected to make the forests produce a revenue, while at the same time he will be placing them in a condition by which this revenue will be sustained.

This can be accomplished only by discreet cutting of timber, replanting and the employment of methods of forest control which have proven effective in Europe. When the proposed legislation came up in the Legislature the Liberal Leader declared that the House had not received adequate information on the question, and suggested that the whole matter be the subject of an enquiry either by a Royal Commission or by a committee of the House. The enquiry, he said, would determine the area of pulpwood limits already sold or leased, the area which had been cut, the area now being held in reserve, the area still held by the Crown, and what new growth had developed where cutting had been done. The suggestion was not acted upon.

Power for Ontario Paper Mills

When Premier Ferguson told the Ontario Legislature this week that the Government had formulated a Hydro policy for Northern Ontario, he released news of importance to the pulp and paper industry in the province. This concerns a gigantic new power hook-up by which the Hydro Commission plans to serve the northern half of the province, mines, pulp and paper industry, and the general public, while it is also designed to relieve the ever-increasing electrical energy requirements of old Ontario as well. The undertaking will take some time to work out, the Premier said, but its materialization will see a great transmission line running due north, out of Toronto, and tapping new power reservoirs with a total capacity of approximately 500,000 horsepower. The Nipigon power reserve, the Mississauqua reserve, certain power sites on the Ottawa River now in contemplation, prospective development on the Abitibi Canyon, some 25 miles north of the present end of steel on the Temiskaming and Northern Ontario Railway, and the Wahnipotae system at Sudbury, in which the Government only recently purchased a controlling interest, will contribute to the great power pool from which, the Premier is confident, electrical energy can be secured for the benefits and advantages of the Ontario consumer, wherever he may be located, just as cheaply as from any other source of supply. The huge development, it has been proposed, will center around the Wahmipitae system, which is in comparatively easy reach of the Ottawa and western power reserves, and can link in with them quite handily. The Government has held an option on the controlling interest in the Wahnipitae for some time, but it was only when Hydro engineers who were in the north all last summer investigating, reported favorably on the big development scheme in general, that the option was taken up. Another feature of the scheme, it is reported, will be made known in a few days, when the Hydro Electric Power Commission will make public its plan of carrying Hydro into the mineral areas of the far north.

Notes and Jottings of the Trade

At a dinner given by Sir Edward Kemp, chairman of the Technical Service Council, in Toronto, the pulp and paper industry was represented by A. P. Costigan, secretary-engineer of the Ontario Pulp and Paper Makers' Safety Association. There was a general discussion on the furtherance of the interests of technical education and ways and means of bridging the gulf between the graduate and his entry into the industry.

The recent purchase of the Thunder Bay Paper Company's plant at Port Arthur, Ont., by Eastern interests, has naturally brought about a change in the management. This change was somewhat delayed owing to the amount of time the officials of the Canada Power and Paper Company and the Abitibi Power and Paper Company have had to devote to conferences in connection with the news print situation. A recent announcement gives the following as the new officers of the Thunder Bay Paper Company: Alexander Smith, president; F. A. Sabboton, vice-president; L. R. Wilson, managing director; W. H. Smith, secretary-treasurer; T. Broadhurst, assistant secretary-treasurer.

Excellent progress is being made with the addition being built to the mill of Hinds & Dauch Company, of Canada, on Hanna street, Toronto, and the structure is now nearing completion. The company expects to have its machinery installed and in operation about the middle of the summer or sooner. The company are large manufacturers of board.

According to information elicited at the present sitting of the Ontario Legislature the cost of air service for forest protection amounted to $301,366.26 in the fiscal year of 1928. During the same period the total cost of fire-ranging was $1,220,208. This sum, with $367,313.80 received by the Government from timber and pulpwood deducted, left a net total of $852,894.72.

Four Toronto contracting firms have received plans and specifications from the offices of Marani and Lawson, architects, 38 Bloor street West, Toronto, and are figuring bulk contract until March 2, for erection of a two-story and basement, fire-proof office for Provincial Paper, Ltd., on University Avenue.

Mr. and Mrs. C. Howard Smith are sailing on March 15 from Naples for their home in Montreal after having spent some time in Switzerland. Mr. Smith, who is head of the Howard Smith Paper Mills, Ltd, is very much improved in health and will be in Canada in time for the annual meeting of the company.

DU PONT *Dyestuffs*

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Pennsylvania Paper Mills Expand Operations

Fine Paper Manufacturers Have Orders on Hand That Call For From 10 to 15 Per Cent Increase in Production—Paper Board Mills Are Exceptionally Active on Orders Gained in January and February—Springtime Revival Predicted

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 4, 1929.—The local paper industry, like all business enterprises, is anticipating improved conditions, with greater surety over the future, after the new administration settles down to its activities, particularly with relation to commercial progress. Clothing manufacturers, shoe and hat makers, dress and hosiery concerns are all in line for the coming early buying of paper commodities needed for the broadening of business in the immediate future. Paper dealers who cater to this class of trade are being consulted on prices and have already received small orders for specialties needed by these industries as Easter markets loom in broadening proportions. Dealers in the specialty field and converting branches are likewise alert to the coming springtime revival. Wrapping papers, bags, glassine and grease proof specialties, wax papers, tissues and containers and boxes, are among the specialties that are being sought. While buying at present is confined to immediate needs there are inquiries for larger quantities for future deliveries. Shredded wax papers for Easter baskets are offered freely. Decorative papers used by the box making trade for the Pascal season are also in demand with many colorful novelties for the current year shown from both domestic and foreign manufacturers.

Though the demand for fine papers is less, some attention on the part of the consumer has been given to specialties in the social grades and stationery supplies. Social stationery, announcement and greeting stocks are more active. Wholesalers report continued interest by larger consumers in book papers among the uncoated lines, while a slightly better market prevails for coated papers. Many new and novel papers and boxings are being offered by nationally prominent papeterie manufacturers and the colorful array of modish tints make attractive to the eye the newest grades.

While distributors become more active, local mills are expanding operations. Board mills continue most active as they rush ahead on orders gained in January and early February campaigns when prices were made attractive enough to produce tonnage orders. Fine paper producers have a fairly gratifying list of orders that call for extension of production to from 10 to 15 per cent above mid February days. Those local manufacturers who secured heavy government contracts are on full time schedule as are the mills that have been building up national distribution in recent years.

Paper Stock Collections Restricted

The Mayor of Philadelphia has issued an order forbidding the collection of waste from street cans and carts, stating that such rummaging caused littering of the streets. The ordinance was strictly enforced and the arrest of offenders followed their being caught in such acts. Among those who were affected by this drastic measure, made for the purpose of keeping the city clean, were collectors of what is known as folded news or household news in the raw material market, consisting of old newspapers that were thrown into the refuse by householders and in turn gathered by the street collectors and sold to dealers. There has been a heavy demand for these cheaper grades of paper in recent weeks owing to the activity of the paper board mills and the restriction in collections has already resulted in an advance of five to ten cents per hundred on the grades involved.

Stream Pollution Propaganda

As the Pennsylvania Legislature meets in Harrisburg, drastic measures are being urged by advocates of the anti-pollution program enrolled as members of the Izaak Walton League through the legal representative of the organization, Grover C. Ladner, now campaigning among various business, civic, social, and fraternal bodies for support of the bill introduced by the recently elected Democratic State Senator, Lawrence McCrossin. The measure will come up for action shortly and is being opposed by the leading business bodies because of the drastic reprisals upon those who violate the laws involved if the Bill passes. Paper manufacturers are being urged to give proper attention to the Bill so that it will not be adopted in its present form and work impositions and hardships on producers who have been endeavoring to co-operate with the State Sanitary Water Board in eliminating the useless contamination of streams to the best of their efforts. The New York and Pennsylvania Company has been representing the paper manufacturers of the State in aiding in the elimination of waste from the streams.

Schallcross Co. Brings Out New Mimeographs

An entirely new line of colored mimeographs has been brought out by the Schallcross Company, Inc., 1450 Gray's Ferry Road, under its own brand. The new line is in the Schallcross Mimeo-Bond, non water marked and of popular prices. It comes in shades of buff, pink, blue and green and is cut and wrapped in standard sizes or in the full ream. This new line of papers supplements the white grades that have been added previously.

Stocking of New Wheelwright Papers

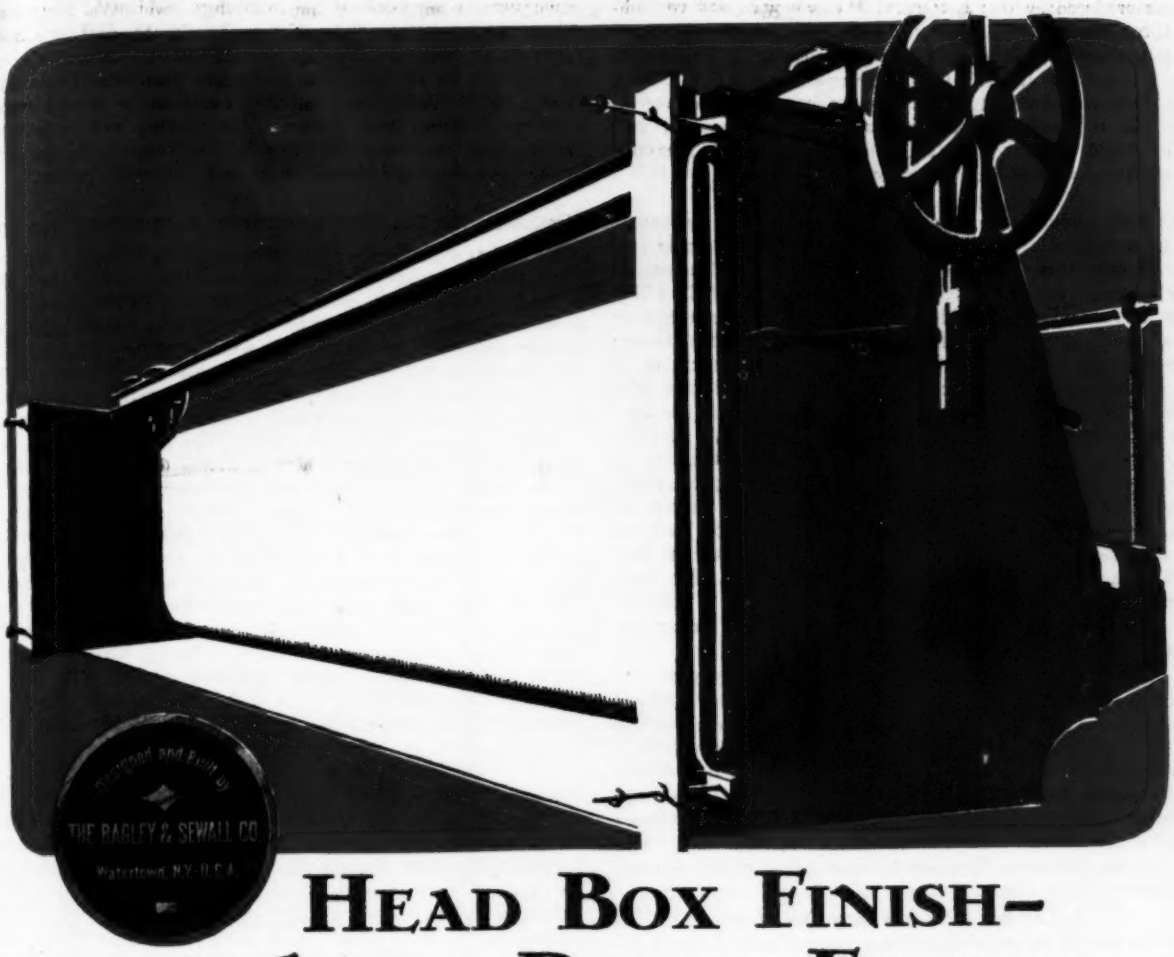
The newest addition to the lines made by the George W. Wheelwright Paper Company, Leominster, Mass., is being stocked in the Philadelphia distributive houses of the Wheelright lines. The local distributors, the Whiting-Patterson Company and the Satterthwaite-Cobaugh Company, are now making shipments of these latest commodities in the Corinthian Cover and text papers made in 25x38—60 pound which are of the latest pastel shades. With the newer pastel shades the Wheelwright company now has white and 7 colors to the assortment of the Corinthian. The new papers are antique wove and made in similar shades that are produced in the B. P. F. These are being exploited here through the distribution branches and through the local manufacturers representative, Otto Renner, with offices in the Insurance Company of North America Building, 16th and Arch streets.

Perseverance Paper Mills Inc. New Lines

Several new grades of glassine and grease proof papers have been developed by the Perseverance Paper Mills, Inc., with offices in the Widener Building, and mills located at Lambertville, N. J. The mills have sent out samples of new lines of glassines and grease proof products in the 1929 assortment. These are made in white and colors, bleached and unbleached. The Perseverance mills are producing 10,000 pounds of these papers per day. There has been installed in the mills new glassine equipment in the 52 inch calenders and other units as accessory devices. The entire mills have recently been modernized under the new exclusive-ownership of George A. Leavitt, who took over the controlling interest a year ago. William F. Skillton is now the superintendent of the plant. The mills were formerly devoted to the production of grease proof papers and parchments, producing 18,000 pounds of these per day. Under the innovation program, the glassine products have been made a leading factor in the paper production. President Leavitt is making the Philadelphia offices in the Widener Building his sales and executive headquarters.

Champion Container Co. Improvements

Additional units to the mechanical equipment of the Champion Container Company, Inc., Water and Morris streets, provides for extension of production on the line of paper tubes and con-



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For full information, ask for Bulletin 6S

The Bagley & Sewall Co.

Watertown, N.Y.

tainers produced by that concern. The new units and two additional machines especially constructed for the manufacture of parallel wound tubes used by the textile industries. The firm has also increased its capacity for shipping drums in its line of fiber products and core tubes for many purposes. Under the innovations, the business developments outlined in the past year by President Gordon Smith and Vice President and Treasurer George Humes, have been carried out.

Curtis & Bros. Mills Run Full Time

With its distribution extended to a larger area in the nation, the mills of Curtis Bros., Newark, Del., have been keeping current operations at capacity. Having entirely retired from the distributive branch of the industry, through transfer of the Philadelphia distribution to A. Hartung, Inc., 506 Race street, after a quarter century of direct sales in this section through its own offices and headquarters, the manufacturers are concentrating on the production of fine papers for the printing and publishing trades. The recent innovations in the mills at Newark, the electrification of the entire equipment, and the installation of modern units in the machinery, have facilitated the production of better papers and the handling of orders with despatch. The Curtis Brothers now have dealers in all important centers of paper distribution in territory east of the Mississippi, including Chicago, Columbus, Richmond, Baltimore, Boston, Detroit, New York, Philadelphia, and along the Pacific Coast. The local distributors, A. Hartung, Inc., are now stocked with a complete line of Curtis, Nonantum, Horizon, Enfield, Paradox, Exeter, and Utopian papers, made by the Delaware producers.

Penn Card & Paper Converting Large Consignment

The newly extended cutting department of the Penn Card and Paper Company, 20 North 6th street, is engaged in the converting of the recently received five carloads of fine papers from a Boston concern which disposed of the lot as discontinued lines of flat papers, cover grades card stock. The cutting department has been further extended by the addition of a 60 inch automatic cutter which augments the several smaller units and rotary cutters already installed. The added larger cutter equips the firm to convert into all sizes and shapes of cards and flat stock.

E. Latimer Jr. Makes New Die Wipe

A new die wiping paper has been developed by E. Latimer Jr., 126 North 4th street, which is especially recommended for its greater yardage factors. The new paper is called the Hercules and is an entirely original sheet die wiping grade of light weight and super calendered pure sulphate base. It is produced in all sizes for die wiping purposes. There is more yardage to the pound than the ordinary die wiping papers because of its light weight. The Latimer company has installed a slitting department for the purpose of converting its own line of die wiping papers for the trade and the consumer.

Miss Anna Maher Enters Convent

Miss Anna Maher, who for more than eleven years was associated with the Saxe Paper Company, 320 Race street, as manager of the office and credits, has joined the Sisterhood of St. Francis, in the mother house at the Convent of Our Lady of Angels, Glen Riddle, Pa. Miss Maher was prominently connected with Catholic Church in this city and was for several years Girl Scout Leader at St. Ritas Church. She has been succeeded by her friend, Miss Stella Hahn, who is now manager of the Saxe office and accounting department.

Wholesale Waste Merchants Banquet

In its annual celebration tomorrow evening, the Wholesale Waste Merchants Association of Philadelphia will bring together trade associates of the paper stock division of the industry. The program will consist of a banquet followed by an elaborate vaudeville entertainment. The meeting tomorrow night will be the 24th anniversary of the paper stock dealers organization, which was formerly known as the Philadelphia Paper Stock Dealers' Association. The committee in charge of arrangements is composed of the following: William L. Simmons, Jr., of John Simmons Sons; George H. French, of Castle and Overton, Philadelphia Branch; and William J. McGarity, Jr., of the Penn Paper and Stock Company. President Thomas A. Kenny, of the Philadelphia association and of the International Trading Company, will preside. The meeting will bring together waste trade associates from various parts of the country, at the Lorraine Hotel, Broad street and Fairmount avenue.

Gould Paper Co. Has Successful Lumbering Season

LYON FALLS, N. Y., March 2, 1929.—The Gould Paper Company has brought its lumbering operations at North Lake in the Adirondacks to a close following one of the most successful seasons in many years. Since the winter's work was started early in January about 17,000 cords of pulp wood have been hauled from the skidways over Ice Cave Mountain to Moose River, a distance of 12 miles, where they are now awaiting the spring drive. The company operates four camps and employs several hundred additional men during the winter season. The trees are felled, cut into fourteen-foot lengths, and then peeled during the summer. From August until November they are skidded to the skidways where they are piled and left until winter. A few days after Christmas hauling operations are started. The logs are loaded on sleighs and drawn from the skidways to the main yard where they are picked up by tractors and drawn to Hoose River. There they are rolled on the ice in readiness for the spring drive. The company has a fleet of tractors and each is capable of drawing from eight to eighteen loaded sleighs. The log drive takes the timber to the company's mills at Lyon Falls where they are made into pulp. The pulp turned out is used largely to supply material for paper manufacturing plants in various sections of the country.

$100,000 Loss in Paper Mill Fire

Damage to the extent of about $100,000 resulted from a fire on February 27 in the old Lybster mill at Merritton, Ont., of the Alliance Paper Mills, Ltd., a large three-story stone building, formerly part of the Lincoln Paper Mills, and now controlled by the Howard Smith interests. But for a concrete floor the entire interior would have been gutted, but as it was, the flames were confined pretty much to the upper floor. The cause of the fire is a mystery, according to K. S. Maclaughlan, local manager of the company. The Lybster building was used chiefly as a storehouse for finished paper products, a lot of which was destroyed or badly damaged. The top floor was the "broke" room, where waste paper was kept, and spontaneous combustion may have been the cause of the blaze. In the damaged building, there are beater machines, but the paper machines are in another building, and it is not anticipated that the fire will materially interfere with the running of the mill. Considerable damage was done to the stock by water.

Indemnity Claimed From Abitibi Paper Co.

It is possible that, as a result of the appointment of a committee by the City Council of Sault Ste. Marie, Ont., to investigate a claim that the Abitibi Power and Paper Company mills in that city did not employ during 1927 and 1928 the number of men that their agreement called for, the mills will be assessed for taxes mentioned in the pact. The matter has been raised by one of the aldermen who says that last year, at any rate, the total of men employed was under the figure called for by their agreement, and that as a result the city is entitled to back taxes. The city assessor explained that the matter had been taken up some time ago, and that the Abitibi company quite frankly admitted that they did not have the full number. He cautioned the council against hasty action, however, stating that there were certain steps that should have to be taken by the city, including an official inquiry into the number of men employed, which had not been done before the required date. The whole matter will be enquired into by the City Council.

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Northwest Paper Co. In Huge Amalgamation

In one of the largest and most consequential mergers in the recent history of the paper industry, The Northwest Paper Company with headquarters at Cloquet, Minn., and plants there and at Brainerd, Minn., has taken over the Cloquet Lumber Company, Johnson-Wentworth Company and The Northern Lumber Company, together with the Duluth and North Eastern Railroad, the General Logging Company, the Northland and the Northern power companies and other subsidiaries, forming one corporation with capital stock exceeding $14,000,000 and assets, as of February 1, aggregating $21,000,000.

While no essential change of ownership is involved—all the several concerns being members of the Weyerhaeuser affiliation of forest products manufacturers and distributors—the amalgamation is of great interest to the paper industry because it solves the peculiar problems presented in the utilization of pulpwood and other timber in northern Minnesota; because it involves a possible reforestation project that will be observed with interest by paper producers in other regions; and because it assures the permanence of Cloquet as a paper-producing and general wood-working center.

Pulpwood Conditions In Arrowhead Country

In order to get a clear picture of the future significance of this consolidation, it is necessary first to visualize conditions in the woods bordering Canada, in the "Arrowhead country" northeast of Duluth. While there is a large stand of virgin timber there, it is exceedingly mixed as to species, including spruce and balsam desirable for pulpwood, genuine white pine and Norway pine which are preferred species for the manufacture of the better finishing grades of building lumber, and, as well, jack pine, popple, cedar, birch and tamarack—species which the logger of a generation ago passed by as of no importance.

It is this mixture of species which heretofore has prevented permanent operation by pulpwood and saw-timber operators in northern Minnesota. One after another, lumber mills in this region have pulled up stakes and moved to the far West, while paper mills have had to go farther afield for their raw materials, depending to an increasing extent upon Canadian sources.

Two things were necessary to check these tendencies: first, a diversified manufacturing set-up which would make possible the economical logging and the suitable utilization of the wide variety of species available; secondly, a concerted and balanced plan of operations that would assure economy and continuous operation at every stage of the utilizing process. Whether they involved the construction of new logging railroad, or costly research in the development of new by-products, or the erection of new plants, these two requirements called for the investment of huge sums of money. Previous operators in the region have been unwilling or unable to do such pioneering, with the consequences noted.

Unified Logging Operations Assured

But the situation is considerably altered by the amalgamation of The Northwest Paper Company. Under the management of G. E. Marshall, former member of the United States Forest Service, the timber department handles the stumpage required to provide ample and suitable timber for all the company's activities. Logging is done by the General Logging Company, a subsidiary included in the merger, under the direction of Frank A. Kelly, general manager, and J. C. Campbell. By the unified planning of logging operations with all manufacturing requirements in mind, the General Logging Company, which parenthetically, has 2,000 men in the woods this season, is able to supply an ample quantity of the correct species of timber to assure continuous operation to each of the various fabricating units. The cheaper raw material that would result from the efficiency and economy to be effected at

As vice president of the Northwest Paper Co. in charge of the Lumber Division, Mr. Sherman L. Coy will continue in service to the lumber trade of the country as he has been for many years, and as golfer he will continue to be the terror of the North-country links.

Mr. R. M. Weyerhaeuser, chairman of the board of directors of the Northwest Paper Co.

Thomas G. Johnson, superintendent of the Brainerd plant of the Northwest Paper Co.

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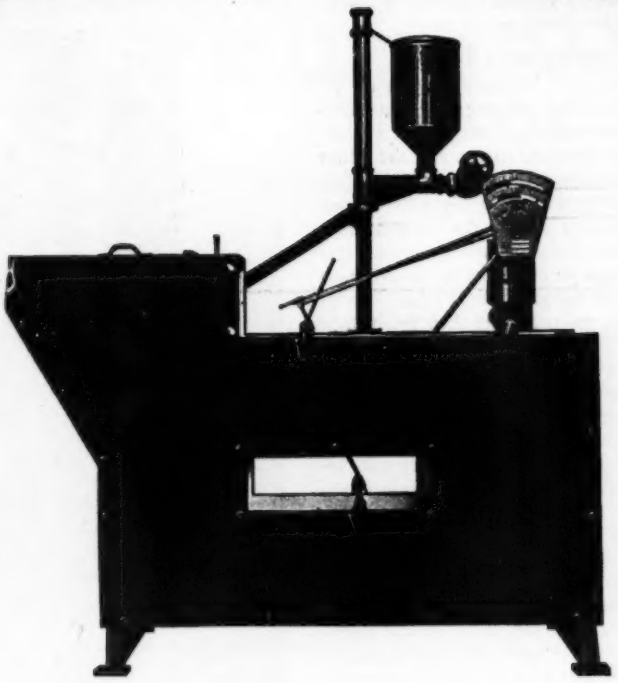

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this point furnished, in fact, one of the motives for bringing the several industries at Cloquet under one management.

Transportation of the forest-crop is charged to the Duluth and North Eastern Railroad, of which Charles A. Jensen is superintendent. This consists of some sixty miles of main line classed as a common carrier, extending north and east of Duluth, and ninety miles of road, not including the various branches needed to tap the company's holdings near the Canadian border.

Diversification at Manufacturing End

However, economical operation on a permanent schedule required, in addition to these facilities for logging and transportation, a radical departure from the traditional method of timber-cutting whereby the cream species were taken out and the minor species left standing. And this departure called for extraordinary diversification at the manufacturing end. This has been accomplished by many years of development and by the investment of millions of dollars in experimental equipment and laboratory research. In consequence, the network of industries at Cloquet now includes the following units, which are given with brief descriptions of their equipment, their raw materials and their products.

Pulp and Paper Division of The Northwest Paper Company, under direct supervision of Vice-President W. H. Kenety. Its plant at Cloquet is a modern, practically fireproof structure, under the superintendence of W. K. McNair, unique in its facilities for utilizing a variety of woods and for producing virtually any grade of pulp or of paper, including certain specialties. This mill includes a kraft mill, a sulphite mill, of which J. W. Stevens is superintendent, the only soda mill west of Ohio and east of the Pacific coast, under supervision of C. K. Textor, and a sodite mill unlike any other in the country, upon the development of which approximately $1,000,000 was spent. The paper-making department, of which M. J. Foley is superintendent, has three machines.

These facilities make possible the employment of several north-country species hitherto not extensively used for pulp-making—notably jack pine, popple, birch, tamarack, and Balm of Gilead—besides all the spruce found in the region. This provides a profitable outlet for such pulpwood of these species as The General Logging Company takes out of the woods. The diversified pulp-production enables the Cloquet plant to operate without purchase of pulp from other sources—but, in fact, to sell it, both bleached and unbleached, to industries requiring it—and to make paper absolutely without the use of old paper stock, every pound being produced entirely from virgin wood.

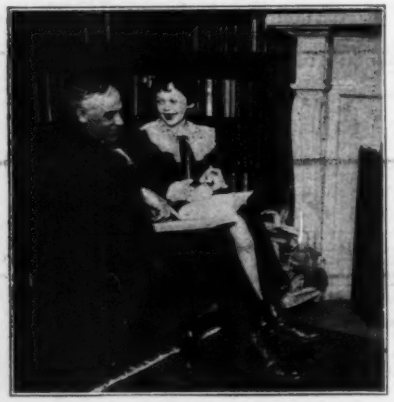
Production includes both fine and coarse papers: Klo-Kay English Finish Book paper; Klo-Kay Offset, Klo-Kay Label, also tablet, writing and drawing papers; Nortex, Arrowhead and Carleton Envelopes; No. 1 and No. 2 Kraft wrapping, gumming papers, and certain other specialties. Distribution of the line is national, through sales offices in New York, Chicago, St. Louis and St. Paul. C. I. McNair, Jr., is sales manager.

Pulp and Paper Mill Expansions

With more than 600 men on the payroll, output aggregates 100 tons a day. The Cloquet factory is in the midst of an expansion program which contemplates tripling present facilities. New machines will be installed in the paper-making department in the near future. A large laboratory is maintained with a staff under the direction of Dr. Walter Hoffman. All these developments are for the purpose of further diversifying the production as well as to increase capacity of the present lines.

At Brainerd, Minn., is the second plant of the Pulp and Paper Division, of which Thomas G. Johnson is superintendent. Its out-

G. E. Marshall, whose job is to stake out the timber supply necessary to keep the Cloquet industries running perpetually, is shown here calling attention to a Norway pine in contrast with second-crop white pine near the forestry station at Cloquet, the land for which was presented 20 years ago to the State of Minnesota by the Weyerhaeuser affiliation of lumber interests.



During the daytime H. C. Hornby is president of the Northwest Paper Company at Cloquet, but in the evening he is just "Grand-dad." Asked to pose for a picture for the accompanying article, Mr. Hornby expressed a preference for the sitting to be at home with Mistress Dorty Jane, his granddaughter, rather than in his office or about the mills.

D. C. Andrews, an old-timer in the paper development at Cloquet, now holds the desk of purchasing agent of the Northwest Paper Com-purchasing agent of the Northwest Paper Co.

W. K. McNair, superintendent of the Cloquet paper plant of the Northwest Paper Co., (right) and M. J. Foley, superintendent of the paper-making department, were checking over a sample of the stock for the 1929 score-card of the Chicago Cubs, and the machine before which they stand was in the midst of the 15-ton run required for this job, when the photographer happened along.

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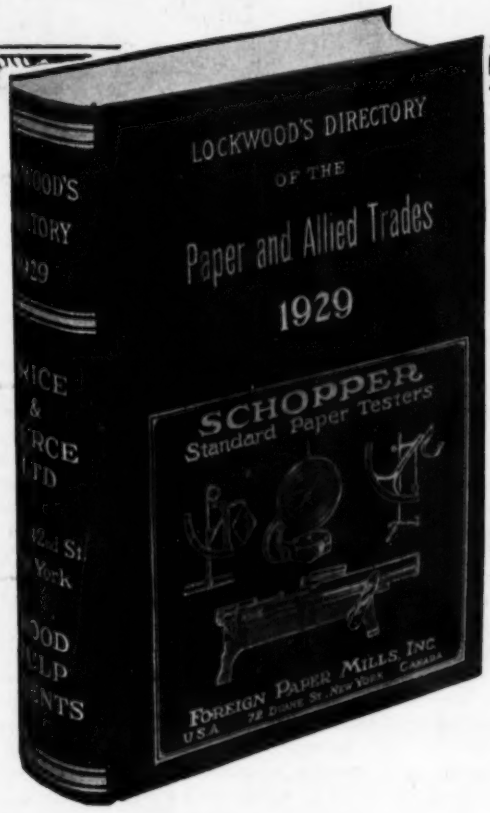

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LOCKWOOD TRADE JOURNAL CO.

10 East 39th Street

New York, N. Y., U. S. A.

"Yeh, she's running all right!" mutters J. W. Stevens, superintendent of the sulphite mill department at Cloquet, as he pauses to check the pulp as it comes off the machines in his department.

W. B. Driscoll, vice president in charge of the Lumber Specialties Division of the Northwest Paper Co., is listining to I. J. McLaughlin, assistant manager, discussing the process of converting low grade lumber into an unbelievable number of stakes for the Soo Line Railroad. Mr. Driscoll is at the reader's right.

W. F. Hoffman, chief chemist of the Pulp and Paper Division of the Northwest Paper Co., demonstrating how the paper mill is operated under strict laboratory control.

put is confined to news print and allied lines, the equipment consisting of a pulp mill and one Fourdrinier. Power is supplied by The Northern Power Company at Brainerd, also owned by The Northwest Paper Company.

Second among the activities at Cloquet is the Lumber Division of the amalgamated concern, in charge of Vice-President Sherman L. Coy. This unit runs a new up-to-date sawmill, which includes the re-manufacturing plant in which 4-Square packaged lumber is prepared. Total production of genuine white pine and northern pine aggregates some 90,000,000 feet annually, continuing all grades of lumber which the building trades and wood-working industries of the eastern half of the United States have been accustomed to receiving from Cloquet for the last forty years. The Lumber Division consumes all the saw timber of preferred lumber species which The General Logging Company harvests.

Lumber Specialties Produced

The third part of the new organization is the Lumber Specialties Division, with Vice-President W. B. Driscoll in direct control. This, again, represents an extremely interesting new departure in industry. Starting some eight years ago with a cut-up plant for the manufacture of cut-to-size crating designed by a crating engineer whose services were put at the disposal of shippers throughout the country, this division now operates a specialized sawmill and a cut-up plant designed to cut 35,000,000 feet annually of small logs and bolt stock. It continues to produce crating, but has reached out into a new line—the manufacture of wood parts for industries that can use such semi-fabricated pieces for assembly into their products—and in both these applications it has found highly satisfactory uses for some of the species not available for the other divisions and for under-sized logs.

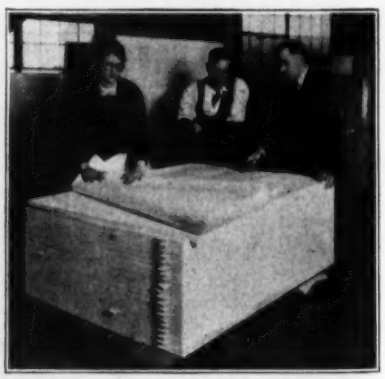
Furthermore, this exceptionally well-rounded manufacturing set-up is amplified by other industries at Cloquet not included in the merger. Chief among these is the Wood Conversion Company, known to the lumber and building trades as the by-products division of the Weyerhaeuser affiliation, which uses what used to be waste from sawmill operations to make two building specialties —Balsam-Wool, the insulating blanket, and Nu-Wood, a rigid structural insulation. Then there are two operations entirely independent of Weyerhaeuser ownership: Rathborne, Hair & Ridgway, box-makers, controlled by Armour & Co., and the Berst-Foster-Dixfield Company, manufacturing toothpicks, clothes-pins, match sticks, paper plugs and numerous other wood products. These plants receive their bolt stock and other raw materials from The Northwest Paper Company, so that logging is planned to take care of their requirements.

Inter-Related Industries Linked Together

Thus it can be seen that the merger knits closer together a various and yet inter-related group of industries, making increased efficiency and far-seeing planning possible for each unit. Of course, some program of reforestation is essential to make the Cloquet operations permanent in a complete sense.

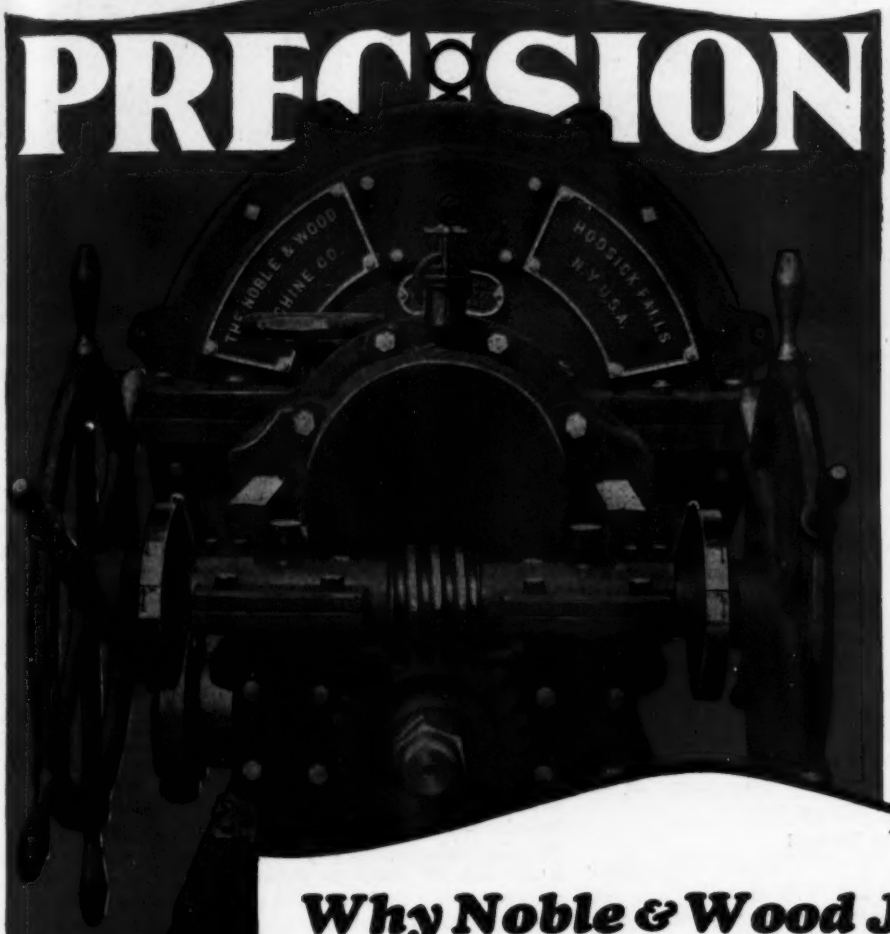
Two years ago the Constitution of Minnesota was amended to permit the legislature to encourage reforestation on privately owned lands through a new method of taxation. So last year the

One of the things C. K. Textor, superintendent of the soda mill at Cloquet, checks up on in his rounds through the plant is the condition of the cooking liquor as shown in the digester room where there are six great digesters and six evaporators.



While Clarabelle Franklin "fans" a pile of book paper before it is crated, Thomas J. Grotty, supervisor of production in the finishing room at Cloquet, and C. I. McNair, Jr., paper sales manager of the Northwest paper Co., discuss the fine points of its quality.

PRECISION



Why Noble & Wood Jordans Make it—BETTER!

Two-thirds of Jordan orders now in hand specify "Precision Thrust," —an indication of the constantly improving standards demanded by mill superintendents.

For the precision thrust means "high standards,"—*absolute control* of stock refinement in the Jordan. It controls plug adjustment to split thousandths of an inch,—easily. It eliminates uncertain operation due to carelessness, change of shifts or hit-and-miss personal judgment. It provides the means for tabulating plug settings so identical results can be achieved again and again.

Just one exclusive Noble & Wood feature that helps makes better, more uniform paper. Any of the eight Noble & Wood Jordan sizes can be equipped with Precision Thrust,—and it's worth while.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York

Charles A. Jensen, general superintendent of the Duluth & North Eastern Railway, a subsidiary of the Northwest Paper Co., is giving one of his engine crews their "walking papers" as they set out from Cloquet for the tall timbers.

"Steady! Steady there!" F. A. Kelly, general manager of logging operations for the Northwest Paper Co., calls to the engineer of the log-jammer, while J. C. Campbell, a veteran logging manager for the Weyerhaeuser affiliation of forest products interests, surveys a portion of the pulpwood stock in the yards at Cloquet.

On the loading platform of the paper mill at Cloquet, W. H. Kenety, vice president of the Northwest Paper Company, assures the boys that, though his new office includes the administration of all kinds of forest products operations, he has lost none of his interest in paper.

legislature passed an auxiliary forest act which provides, in substance, that any owner of land suitable for reforestation but not for agriculture may enter it as auxiliary forest land under contract to devote it to growing timber as a crop for fifty years.

No land has been entered under this law as yet. This has not surprised the legislators responsible for the act, for they realize that the tax rate fixed was arbitrary and might have to be revised in accordance with subsequent experience. To get that experience an interim commission of the legislature was appointed last year. It has studied the situation, not only in Minnesota, but also in Michigan, Louisiana, and the few other states that have similar laws, and it has prepared a recommendation which, it is expected, will be submitted to the legislature at its present session that the tax rate on auxiliary forest lands be adjusted in the light of its investigations in such a manner as to put the entire purpose of the present legislation on a practical operating basis.

Reforestation Planned

Now, H. C. Hornby, president of The Northwest Paper Company, states that, if the legislature adopts the recommendation of its interim commission, the company will undoubtedly enter a contract to reforest a portion of its present holdings to insure, under scientific forest management, a sufficient annual timber crop to keep the Cloquet industries operating and to establish them on a permanent basis. And Mr. Marshall, manager of the timber department, gives assurance that this is entirely feasible from the technical forestry standpoint.

So the culmination of this far-visioned program for intensive forest-products utilization seems at hand. Twenty years ago the Weyerhaeuser interests gave Minnesota a tract of land near Cloquet for experimental work in reforestation, and a forestry experiment station of the University of Minnesota is established there now. Since the town was wiped out by fire ten years ago, not only have its mills been rebuilt, but other cooperating industries have been encouraged to come in. Investments have been increased. Research has been carried on. New products and by-products have been put into production and distribution.

This new merger reinforces the whole program and advances it one step nearer to complete stability and absolute permanency. Whether or not reforestation becomes practical as contemplated, The Northwest Paper Company now is in a position to utilize the forest crop more intensively and more efficiently than ever heretofore. Cloquet appears in a new light as an ideal example of practical forest conservation through the diversification of its manufacturing facilities.

Hinde & Dauch Ask Lower Freight Rates

BROOKVILLE, N. Y., March 2, 1929.—The Hinde & Dauch Paper Company, with principal office at Sandusky, Ohio, and several plants in various sections of the country, states in a brief just filed with the Interstate Commerce Commission at Washington that it paid for freight charges during 1927 the sum of $1,372,584. The firm contends that the amount was too much and it asks lower freight rates on chip board from Watertown to central freight territory. It demands a rate not to exceed that which it would have if its plant was located in Syracuse instead of here. During the year 1927 the company claims that it moved 2,018 cars in and out of Watertown indicating that a considerable amount would be saved if Syracuse rates prevailed in this territory. The firm claims that chipboard is the lowest in value of all paper products and therefore a lower freight rate should be placed upon it. Arrayed on the side of the company in the dispute is the New York Development Association which has been waging a fight for some time to obtain readjustment of freight rates so as to put the industry in the North Country on a more competitive basis with the rest of the state. The brief points out that the rate and distance from Brookville to Sandusky is 31.5 and 449 miles while the rate and distance from Syracuse to Sandusky is 23.5 and 390 miles. In shipments to Chicago the rate is 10 cents more than Syracuse or 33 per cent more than Syracuse although the latter city is only 68 miles nearer to Chicago than is this territory.

N. S. Paper Plant Progressing

According to word received in Toronto thirty per cent of the steel work for the plant of the Mersey Paper Company, Ltd., at Herring Cove, Brooklyn, Queen's County, two miles from the historic town of Liverpool, N. S., has been erected, and it is expected that the mill will be making news print by November of this year. Company officials expect to have no difficulty in marketing the product, as they regard the mill site as ideal for shipments. Located at tidewater, the company can convey the rolls of paper from mill to steamer, thence to be transported to the great news print markets on the Atlantic seaboard of the United States. Liverpool is about 500 miles from New York, and the water-borne freight rate will be very attractive, officials say, to newspaper publishers there. The plant will have a capacity of 250 tons of news print daily. Wharves are being built at Herring Cove, enabling cheap transportation of both raw material to the mill and finished product from the mill.

Speed Reducers

Gears and Forgings, Inc., of Cleveland, Ohio, have just issued two new bulletins, one of which takes up in detail the construction of their Planetary line of Speed Reducers, while the other does likewise with their line of Worm Gear Speed Reducers.

These bulletins are both comprehensive and informative and are profusely illustrated. The advantages of the different types of Speed Reducers, their particular field, and the features of merit in their design and manufacture, are plainly outlined.

The "M. & W." Two-Drum Winder

increases dividends by saving time when changing slitters

In almost all cases the well-known "M. & W." Four-Drum Winder is the right winder to use. Winding Rolls independently saves the finished product.

For some special work the "M. & W." Two-Drum Winder equipped with patent removable bottom slitters is more suitable, especially where several rolls are wound on one shaft.

We are now prepared to supply Two-Drum Winders, when preferred, to Four-Drum Winders, and would call attention to some of their new features, as follows:

1. **Automatic tension regulation—Raybestos discs brake.**
2. **Spreader for web of paper before slitting.**
3. **No bottom slitter shaft. Bottom slitters independently driven and removable, same as top slitters.**
4. **New type of spreader and separator prevents weaving together.**
5. **Electric power lift for regulating hardness—and for removing heavy rolls from winder to truck.**
6. **Improved motor drive—with slow and variable high speed.**

(PATENTS PENDING FOR THESE IMPROVEMENTS)

Fitted with plain or collapsible shafts—
For rolls 6" wide and over
Up to 60" diameter or more

FURTHER PARTICULARS UPON REQUEST

The MOORE & WHITE CO.
PHILADELPHIA, PA.
N. PHILA. STA. PENNA. R.R.
PAPER MILL MACHINERY

New York Trade Jottings

The Air Preheater Company, formerly located at 25 Broadway, New York, has announced the removal of their offices to 40 East 34th street, New York, corner of Madison avenue and East 34th street, New York, corner of Madison avenue and East

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, and Mrs. Kellogg, have returned to New York after spending an enjoyable honeymoon in the Isle of Pines. During their holiday they also visited Cuba, Florida and Louisiana.

* * *

Allan & Gray, paper merchants, have removed from 54 Beekman street to 30-32 West 50th street, New York, where they occupy the first two floors and basement, the store being on the ground floor and the offices for executives, auditing, etc., will be located on the second floor.

* * *

O. R. Dymling, of Stockholm, Sweden, arrived in New York last week on the French liner *Ile de France*. Mr. Dymling, whose father is one of the leading pulp and paper men in Sweden, is associated with J. Andersen & Co., of 21 East 40th street, New York.

* * *

Dr. J. P. Longstaff, general secretary, Society of Chemical Industry, announces retirement on March 31, 1929. Henry T. F. Rhodes, honorary general secretary, British Association of Chemists, has been appointed assistant to Dr. Longstaff and will succeed him on that date.

* * *

The Customs Appraising force at New York is now settled in its new quarters at 201 Varick street. Import cases are arriving on an average of 2,500 each day and these are being handled without any congestion or confusion whatsoever, due to the spaciousness of the new quarters and the modern methods installed.

* * *

The report of the Corn Products Refining Company for the year ended December 31, 1928, shows net income of $13,192,974 after interest, depreciation, federal taxes, etc., equivalent after preferred dividends, to $4.52 a share (par $25) earned on 2,530,000 shares of common stock. This compares with $11,905,289, or $4.01 a share, in 1927.

* * *

New common stock of the Hercules Power Company, Wilmington, Del., has been placed on a $3 annual dividend basis, equivalent to $12 before the recent four-for-one stock splitup, through declaration of a quarterly dividend of 75 cents, payable March 25 to stockholders of record March 14. The old rate was $8.

* * *

Mathieson Alkali Works, Inc., have declared a stock dividend of three shares for one and authorized an increase in the no-par common stock to 1,000,000 shares, from 200,000 shares. The company also declared regular quarterly dividends of $1.50 on the common and $1.75 on the preferred, both payable April 1 to stock of record March 15. The stock dividend payable date is to be fixed later.

* * *

Sven C. Lindberg, chemical engineer, formerly holding the post of superintendent with the West Virginia Pulp and Paper Company, the Oxford Paper Company, and the Union Bag and Paper Company, and who has been located for several years in Sweden, where he has been engaged in the managing and constructing of pulp mills, has returned to this country as representative of the Erkens Corporation, with offices at 122 East 42nd street, New York.

Boston Paper Market Fairly Active

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 4, 1929.—A fair amount of business is being transacted in paper, some houses receiving a substantial volume of orders. The demand for high grade bonds and ledgers is good; although that for the lower grades is less noticeable. Kraft is moving in about the same volume, average-sized sales being made. Heavy kraft is mentioned as in some demand.

The box board situation is practically the same. Considering the fact that box manufacturers placed large orders from December to February, inclusive, the amount of business received by the box board dealers is regarded as rather good. Competition is said to be so keen that there is no chance to make the prices higher at present, putting them back on the levels they held before the cut. A dealer says that production must be curtailed before any advance will be possible.

Waste paper is moving fairly well, prices remaining firm. Mixed paper is stronger, with the No. 1 grade now quotable at .55 to .57½, compared with a previous range of .50 to .55. It is understood that buyers outside of Boston have been coming to town, taking substantial amounts. Foreign manila rope is stronger and quotable at a minimum price of 4.25. The foreign rag market generally remains quiet, although foreign roofing rags are firmer, with an upward tendency. Accumulations are rather low on account of the severe winter weather prevailing in Europe.

Trade Practice Conferences Discussed

"How Will Trade Practice Conferences Affect the Individual Salesman?" was the subject discussed at the regular weekly luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held in the Canadian Club, last Monday. S. C. Knode, president of the association, occupied the chair, and there were a good number of members and guests in attendance.

Dr. E. O. Merchant, who has recently been through a Trade Practice Conference with the Paperboard Industries Association and is familiar with the subject, explained the procedure necessary in getting a Trade Practice Conference started and completed. He also analyzed the various rules and trade practices adopted by his industry and stressed their advantages and results.

Paul S. Hanway, secretary of the American Waxed Paper Association, the first group in the paper industry to hold a Trade Practice Conference, also gave an interesting address and showed how the various problems confronting his industry were being met. He stated that the results so far had been very satisfactory, especially in the elimination of unfair practices, and claimed the development of a much better spirit in the industry, due to the sincere efforts of its members to correct evils and abuses.

New Western Sales Co. Formed

Provincial Paper, Ltd., have sent out a circular from their head office in Toronto announcing the formation of Mid-West Paper Sales, Ltd., successors to Provincial Paper Sales, Ltd., Calgary, Winnipeg and Edmonton. After three years control by Eastern Canadian interests, the business has again come into the ownership of the Western men who have directed it during the past several years. The new company has purchased the business of Provincial Paper Sales, Ltd., formerly John Martin Paper Company, Ltd., including the branches at Winnipeg, Calgary and Edmonton. Both the latter companies were selling agents for Provincial Papers in the West.

The officers of Mid-West Paper Sales, Ltd., are: President and Managing Director, A. Clarke Hunt; Vice-President and Sales Manager, Herbert B. Kirby; 2nd Vice-President, Thomas Underwood; Treasurer, Richard Hillier; Secretary, Gilbert Garnett; Manager coarse paper section, Peter Christie; Calgary Manager, W. J. Thompson; Edmonton Manager, George Hatch. The company will handle the products of many of the eastern paper mills.

Putting new life into old paper machines

There comes a time in the life of engine-driven paper machines when production becomes uncertain and maintenance becomes higher. Now — there is an economical way to give the old machine a new lease on life and to effect decided improvements in operation. This is what you are sure to get: *improved speed regulation . . . more flexible control . . . better product . . . less maintenance.*

Full-automatic control for the motor below, with Westinghouse carbon-pile voltage and speed regulators.

250-kw. synchronous motor-generator for furnishing power to the motor shown below.

300 h.p. adjustable-speed d.c. motor, driving a paper machine. Eddy Paper Company, Three Rivers, Michigan.

This is how to do it:

By replacing the old engine with Westinghouse single-motor drive, including adjustable speed control and automatic speed regulation, you will thus be able economically to improve your machines that are too old to warrant sectional drive. This will assist in obtaining the more uniform paper weights that are now demanded for modern high-speed printing presses. Further information on request.

WESTINGHOUSE ELECTRIC & MFG. CO.
EAST PITTSBURGH, PENNA.
Sales Offices in all Principal Cities
of the United States and Foreign Countries.

Westinghouse

Serves the paper industry with . .

Automatic Substations
Capacitors
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Gear Units
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Lighting Equipment
Mazda Lamps
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Motors and Controllers
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Safety Switches
Speed Reducers
Stokers
Switchboards
Transformers
Turbines
Voltage Regulators

PAPER TRADE JOURNAL
ESTABLISHED 1872

10 East 39th St., New York

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Vol. LXXXVII New York, March 7, 1929 No. 10

NEWS PRINT PRICE SETTLEMENT

The report during the week, apparently on good authority, that a definite settlement would soon be arrived at in regard to the price of news print for the current year produced hardly a ripple on the surface, the development having been discounted for several weeks past. The information given in the PAPER TRADE JOURNAL that the price would be around $55 per ton is likely apparently to prove correct as the price reported as being practically fixed is $55.20 per ton. The Hearst people who had closed a contract with the International Paper Company at a lower figure, are stated to have agreed to pool their contracts and to take the average price of $55.20 as the basis for 1929 for all the producers. Last year the price for the first six months was around $65 a ton, and for the latter half of the year $62. Thus the mills will receive an average of $6 or $7 a ton less than was received in 1928.

While the actual figures as to production in Canada for 1928 have not yet been issued by the Dominion Bureau of Statistics, they are pretty well known. The production of news print in Canada in 1927 was 2,082,830 tons, and the exports amounted to 1,881,867 tons. In 1928 the exports amounted to 2,206,587 tons, an increase of 201,963. The domestic consumption in 1927 was about 200,000 tons, and it was certainly rather more in 1928. Total production for Canada for 1929 may therefore be estimated at 2,450,000 tons, and on this basis, it may be estimated that the producers will receive $15,000,000 less than they would have received for an equivalent production in 1928.

While, of course, there is general satisfaction at the price having been stabilized, and at the fact that the possibility of the continuance of a disastrous price war has been eliminated, there is no attempt to hide the fact that the situation is still a very serious one for all concerned, and that it will affect earnings most unfavorably. For instance, an example is quoted of one of the leading companies whose net earnings, on the basis of last year's production, will decline by $1,080,000. This company's profits last year applicable to preferred and common dividends amounted to $1,683,000.

This may be taken as a typical example of how the present price policy will work out, but the earnings of the various companies will show no general average of reduction.

The contract entered into calls for an even scale of operations throughout the industry, which means that all the mills will operate at around 80 percent of capacity. Last year some mills operated at full capacity, while others were down to about 50 percent of capacity. The production of some mills will therefore be lowered and that of other mills increased.

Now that the price question apparently has been settled it may be taken for granted that all the mills will settle down to a policy of reducing costs, following in this direction the example of the railways which in the face of high wages and motor competition have been able to increase net profits by increased efficiency in operation.

TO REPEAT SULPHITE COURSE

It is gratifying to know that the Forest Products Laboratory at Madison, Wis., is to repeat its excellent course in sulphite pulp manufacturing during the periods March 25 to April 4 and April 29 to May 9. Two years ago this course was taken by 28 sulphite superintendents.

This course is based on the results of research on which the people of the United States have spent thousands of dollars. During the progress of the course, the entire physical equipment and personnel of the pulp and paper section of the Laboratory will be at the disposal of the men.

The course will provide for instruction in and demonstration of semi-commercial experimental cooks to illustrate the principles of sulphite pulping developed by years of research.

A feature of the course will be informal conferences of students and instructors in which the mill representatives will present mill problems to be discussed. A demonstration will also be made of the use of the rod mill as a refiner for the recently developed semi-chemical sulphite pulp.

The funds at the Laboratory are insufficient even for the most urgent problems of research, consequently a cooperative charge is made to cover the cost of demonstration courses. In this course a fee of $200 is required of each man enrolling. This amount represents only the cooperators' share of immediate costs incurred during the progress of the courses and the preparation of lectures and demonstrations.

The application of experimental results to mill operators will be discussed by Vance P. Edwards, who was in charge of previous courses and who will again direct the lectures and demonstrations

To make the work of the greatest value to those who take the course only fifteen men may be enrolled at one time. Since the number of students that can be enrolled is limited, applications should be sent immediately to the Director of the Forest Products Laboratory, Madison, Wis.

INDEXES PAPER TRADE JOURNAL

The PAPER TRADE JOURNAL is fully indexed—every issue, as soon as published—in a set of cards, which thus brings ready to your hand any article on any subject in this journal or in any one of 1700 other journals in all languages. This Engineering Index Service, instituted in January, 1928, is to be found in the Public Libraries of Newark, Cleveland, Bridgeport, Baltimore and the John Crerar Library, Chicago.

Engineers in any field who live or work in New Jersey will find this mammoth index to the Latest Engineering Literature, in the Public Library of Newark, N. J., which has this journal on file. The Library is open daily from 9:00 to 9:30. It is convenient to all railroad stations. It answers inquiries by mail or by telephone.

Paperboard Industries Associations To Meet

The March meetings of the Paper Industries Association will be held at the Commodore Hotel, New York City, as follows:—

WEDNESDAY, MARCH 20

10:00 A.M.-12:30 Noon—Meeting of the Folding Box Group.
2:00 P.M.- 4:30 P.M.—Meeting of the Paperboard Group.

THURSDAY, MARCH 21

10:00 A.M.-12:30 Noon—Meeting of the Container Group.
12:45 Noon—Luncheon—All members.
1:45 P.M.-4:15 P.M.—Meeting of the three groups in joint session (all members).

Among the items of particular interest which will be reported upon and discussed are the following:

1. Follow-up in connection with action by the Federal Trade Commission on the Trade Practice Resolutions.
2. Meeting of Mill Operators with the Secretary of Labor, Washington, D. C., February 5, 1929.
3. Report of Tariff Hearings, Washington, D. C., February 13, 1929.

A full attendance of member companies is being strongly urged. The statement has been made that no improvement in the industry can be expected until the factors in the industry decide upon a constructive program calculated to remedy the present unsatisfactory conditions, and it is confidently hoped that the March meeting may prove to be the turning point toward greatly improved conditions in the paper board, container and folding box industries.

COMMITTEE MEETINGS—MONDAY, MARCH 18

To avoid conflict with the meeting of the industry on Tuesday, March 19, the meetings of the Standing Committees and of the Executive Committee of the Paperboard Industries Association will be held at the Commodore Hotel, New York City, on Monday, March 18, 1929.

As a follow-up to the action by the Federal Trade Commission in approving the Trade Practice Rules for the paper board, container and folding box industries, James B. Fenton, Chairman of the Central Plan Committee, has called a meeting of the entire industry, to be held in the West Ball Room, the Commodore Hotel, New York City, commencing at 10:00 A. M., Tuesday, March 19, 1929.

A copy of the call for this meeting follows:

"The Federal Trade Commission has issued its decision on the Trade Practices submitted by the industry.

"The Central Plan Committee appointed last December by the Executive Committee of the Paperboard Industries Association, to prepare a plan for organization and financing same for the administration of the Trade Practices when, as, and if approved by the Federal Trade Commission, has prepared such a plan and is ready to submit same to the industry for consideration.

"The plan as prepared is elastic enough to be administered in either of two ways:

"1. By the present organization of the Paperboard Industries Association and its staff, augmented to such extent as may seem advisable.

"2. By a separate organization of the paper board and box industry outside of the Paperboard Industries Association, and headed by some one of national prominence to be known as General Counsel.

"You will be asked to give your unequivocal approval and support both financially and cooperatively to one plan or the other, at the meeting of the entire industry which will be held on Tuesday, March 19, at 10 A.M., in the West Ball Room, Commodore Hotel, New York City."

Crown Willamette Earns $2.09

Earnings of the Crown Willamette Paper Company increased to $2.09 a share on its common stock in 1928 as compared with $1.64 a share in 1927, according to a report by Louis Bloch, president, and released through the Manheim-Dibbern Company of San Francisco. The increase was attributed largely to inauguration of dividends on Pacific Mills preferred stock and declaration of an initial dividend on the common. This is the first year that Pacific Mills has paid dividends in the 15 years that it has operated and it was considered probable that the preferred stock dividend of $6 a share would be continued as a definite policy. Maintenance of the common stock on a permanent dividend basis was said to be dependent on continuation of the progress made in the last few years. All preferred stock dividends, amounting to more than $730,000, have been paid up, President Bloch reported.

Crown Willamette was consolidated with the Zellerbach corporation in the early part of 1928. Results of the merger were reflected in the quarterly reports for last year. Earnings in the first quarter of last year had declined to $697,428 from $782,487 in the corresponding period of 1927. In the second quarter of 1928, while consolidation was being effected, earnings advanced to $967,667 as against $867,301 in 1927.

Results of the consolidation became more noticeable as the year advanced. Net profits jumped from $859,658 in the third quarter of 1927 to $1,074,000 in the same period of 1928, and from $777,321 in the final quarter of 1927 to $1,003,279 in the last quarter of 1928.

Total earnings for the year were $3,742,725 as compared with $3,286,769 in 1927. This amount, which was available to first preferred dividends, was equal to $18.71 a share on the 200,000 shares outstanding, or 2 2-3 times dividend requirements. After deducting first preferred dividends, the balance of $2,342,000 remained for second preferred dividends, or equal to $57.12 a share—nearly ten times dividend requirements.

The remainder of $2,096,000 was available for common stock, or more than dividend requirements.

Indication that Pacific Mills is establishing itself on a substantial earnings basis was seen in the fact that it contributed $468,976 to Crown Willamette earnings during the year, of which amount $339,230 was paid during the final quarter of 1928.

Crown Willamette reported consolidated gross profit of $8,696,000 during the year. Of this amount $2,337,000 was set aside for depreciation and $548,570 for depletion, or a total of nearly $3,000,000 out of the gross profit was placed in reserve.

The consolidated balance sheet as of the close of 1928 showed current assets of $14,699,000 as against $3,732,000 in current liabilities.

To Investigate News Print

WASHINGTON, D. C., March 6, 1929.—Just before adjournment the Senate passed a resolution calling upon the Federal Trade Commission to investigate the news print industry insofar as sales to small daily and weekly newspapers are concerned and on the question of a monopoly. The resolution as it passed is as follows:

"Resolved, That the Federal Trade Commission is requested to make an investigation upon the question of whether any of the practices of the manufacturers and distributors of news print paper tend to create a monopoly in the supplying of news print paper to publishers of small daily and weekly newspapers or constitute a violation of the anti-trust laws, and to report to the Senate as soon as practicable the results of such investigation together with its recommendations, if any, for necessary legislation."

Coos Bay Lumber Co. May Build Pulp Mill

PORTLAND, Ore., March 1, 1929.—A report credited to Coos Bay Lumber Company officials in San Francisco, is that the company have plans under consideration for construction of a pulp mill on property which they own in Marshfield, Ore. It is said the proposed plant would be constructed within the next two years. The company has large timber holdings in that region and could manufacture pulp in connection with their logging operations. The company now has a pulp plant at Marshfield which has been idle for about twelve years but which will be torn down. Water for the new mill would be piped from the mountains. The company is now carrying out an improvement program looking toward greater efficiency through yarding and shipping facilities.

SAFETY

MODERN railroads spend millions for safety; industry drills it unceasingly into its workers. But safety of a different kind is equally important from an economic standpoint—safety in the selection of raw materials. Safe raw materials, such as Mathieson Chemicals, are the best guarantee of safe, dependable results. The entire Mathieson organization takes pride in supplying chemicals that are *safe* in every sense of the word.

The MATHIESON ALKALI WORKS (*Inc.*)
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Works: Niagara Falls, N. Y. Saltville, Va. Newark, N. Y.
Warehouse Stocks at all Distributing Centers

MATHIESON CHEMICALS

Soda Ash
Caustic Soda
Liquid Chlorine
Bleaching Powder
Bicarbonate of Soda
Modified Virginia Soda
Ammonia, Anhydrous & Aqua
HTH (Hypochlorite)
Purite (Fused Soda Ash)
Sulphur Dichloride
Benzoyl Chloride

Benzoate of Soda
Benzyl Alcohol
Ethyl Vanillin
Benzaldehyde
Benzoic Acid
Coumarin
Vanillin

MATHIESON CHEMICALS

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Cornstalks for Paper Making

The following statements are published in response to the multitude of requests for information on the use of cornstalks for paper making which have come to the Bureau of Standards in view of the extensive publicity given the project of the Cornstalk Products Company at Danville, Ill.

In 1926, this concern took over the United States rights for the Dorner process for making paper pulp from cornstalks. This process is designed to overcome some of the manufacturing difficulties which had been found to be inherent in the use of cornstalks. The company has in operation a mill which has a claimed capacity of 25 tons of bleached pulp per day. They do not make paper but sell their product to paper concerns who blend it with other paper making fibers for the manufacture of writing and printing papers.

Resume of the Tests

Through the cooperation of the commercial concerns interested, the bureau has been able to follow the development of the pulp and papers. Samples of both have been tested at frequent intervals. The following is a resume of the tests to date.

A sample of the December 16, 1928 edition of the *Sunday Commercial News*, Danville, Ill., was found to consist of 55 per cent cornstalk fiber, 40 per cent of sulphite fiber and 5 per cent of flax fiber. A sample from the book *Farm Products in Industry* by G. M. Rommel, consisted of 25 per cent cornstalk fiber, 55 per cent sulphite fiber and 20 per cent flax fiber. A number of samples of cornstalk papers made in December 1928 were found to contain from 20 to 60 per cent of cornstalk fiber. The balance was either sulphite or sulphite and flax fiber. The flax fiber content was from 5 to 20 per cent. The flax fiber had all the characteristics of fiber secured from linen rags. Additional samples of writing papers received from the same concern in January 1929, were composed of 60 per cent cornstalk fiber and 40 per cent of sulphite fiber. These latter papers compared favorably with similar papers made from high-grade sulphite fiber in strength, the bursting strength of a 49-pound paper (25x38, 500) being 23.5 points. Their appearance was entirely satisfactory except for cleanliness. They contained black dirt specks and unreduced particles of cornstalk which would greatly reduce their sale value.

Comparative Test Values

A sample of bleached cornstalk pulp received November 30, 1928, from the Cornstalk Products Company, was given thorough laboratory tests. Test sheets made of the cornstalk pulp by hand were compared with similar sheets made of high-grade bleached sulphite pulp. The comparative test values follow:

Weight, 25 by 40—500 ..... pounds	61.2	61.4
Bursting strength ..... points	49.0	35.3
Ratio of bursting strength to weight ..... per cent	80.0	67.5
Thickness ..... inch	.0046	.0056
Folding endurance		
Long direction ..... double folds	1380	90
Short direction ..... kg.	7.4	4.6
Tensile strength		
Long direction ..... kg.	6.7	5.0
Short direction ..... kg.	7.4	4.6
Elongation		
Long direction ..... per cent	3.0	2.9
Short direction ..... per cent	3.1	3.3
Tearing strength		
Long direction ..... g.	67.6	70.4
Short direction ..... g.	68.0	67.6

Pulp Has Excellent Strength

As in the case of the papers, these tests showed that the cornstalk pulp had excellent strength. It was superior in this respect to the sulphite pulp, particularly as regards folding endurance. As in the case of the papers, however, the pulp was deficient in cleanliness, the black particles and unreduced particles of cornstalk being much in evidence. The pulp was furnished in wet-lap form and a very rapid growth of bacteria in the moist pulp occurred. This discolored the pulp very noticeably. The pulp consisted entirely of cornstalk fiber.

Owing to their lack of cleanliness, the specimens of papers and pulps examined so far indicate that the pulp is suitable only for lower grade paper such as news print. It makes a hard and "rattlely" sheet, however, which indicates that it is more suitable for writing papers, as it lacks the softness desired for printing newspapers. The hardness is no doubt due to the large content of pith cells which hydrate readily.

Idea Not New

Whether the Dorner process will permit cornstalks to compete with wood as a paper making material under the present economic conditions still remains a question therefore. According to information received from Iowa State College, which has made an extensive study of the matter, cornstalks can be delivered to mills suitably situated at a cost comparing favorably with wood. There is a possibility that improved technique in the handling and processing of the cornstalks together with the constantly increasing depletion of our pulp wood supply will permit their utilization for making papers. The idea is not new of course, as is shown by the several pages of references to the past attempts to use cornstalks, given in West's "Reading List on Papermaking Materials." Whether the present situation is now right economically for the successful working out of a project of this nature will, no doubt, be definitely decided in the near future by the further developments of this commercial experiment.

TAPPI SECTION, PAGE 156

Relation of Pulpstone Grit to Quality of Fiber*

By Langdon S. Simons[1] and Bernard Bornstein[1]

While a relationship exists between the grit of the pulpstone and the quality of the fiber produced, it is complicated by the use of burrs. The act of burring introduces a set of conditions wholly different from the ones that would be present were we dependent for the quality of stock only on the natural grit of the stones. Because of the fact that burring entirely changes the character and action of the abrasive surface of the stone it is more important than the size of the grit in determining the quality of the resulting fiber. The structure of the stone, however, must be such as to aid the action of the burr and in this way it vitally affects the performance of the stone and the quality of the stock made.

Any discussion of the physical characteristics of pulpstones involves the use of terms that are loosely used by many people, with confusion and misunderstanding on the part of others as to just what is meant. It would seem best, therefore, to find a nomenclature and a method of analysis as a basis of discussion that will be clear to everyone.

The fineness and hardness of a stone are often confused with each other and with the density of the structure. Even the so-called fine stones contain a large percentage of coarse grit sometimes equal to fifty per cent of the total and seem fine because of the dense nature of the structure while more open structures of nearly the same analysis seems coarse. On the other hand very dense stones seem harder than they really are.

Hardness may be defined as the tenacity with which the bonding material holds the grits together. In other words, a hard stone is one in which the bond is so resistant that it retains the abrasive or cutting particles even under severe grinding pressure, so that the stone does not wear away rapidly. A stone from which these cutting particles are easily broken away is called "soft". Density is represented by the weight of a certain volume of material. Sandstones vary in density according as the interstices between the larger grits are filled with finer particles and bond. A dense stone will act as if it were harder than a more open one even though the actual degree of hardness may be the same. Moreover, it will hold a pattern longer.

Screen analysis is the method by which the degree of fineness must be determined, if any degree of accuracy is wanted. There are two ways of preparing the sample and a comparison of the results is interesting. One is to heat the stone to a red heat and then quench it in water. This breaks down the bond and allows the stone to be easily crumbled and the individual grits separated. Another method is to break up the sample carefully with a mortar and pestle. Great care must be taken or the grits themselves will be crushed. Some will be broken down by either method but this can be minimized by care.

The following comparison of the results obtained by analyzing a sample of a medium fine English sandstone illustrates the two methods. A 50 gram dry sample gives representative results.

TABLE 1

Screen Size	Mortar and pestle	Heated and quenched
24	8.3	10.4
30	11.7	9.3
36	14.1	14.6
40	16.7	15.4
46	15.4	15.4
60	6.6	6.5
80	10.0	12.7
90	3.3	3.4
100	3.3	3.4
120	1.6	1.3
140	1.6	1.3
180	1.6	1.3
Fines	3.3	3.4

The closeness of the results shows little choice if care is used and the most convenient method may be employed. It is probable that heating and quenching require less care to produce uniform results. Perhaps fewer of the larger grains will be broken down by the second method. The fines are largely bond.

In the preparation of the following table the second method was used in analyzing various pulpstones from Ohio, West Virginia, Canada and England, and the figures used are averages representing the percentages retained on the indicated mesh screens.

TABLE 2

Type of Stone	Size of screen (meshes per linear inch) 20	28	35	48	65	100	Pan
Fine	0	2	30	30	16	10	12
Medium fine	7	12	35	19	10	7	10
Medium coarse	26	12	24	19	8	5	7
Coarse	45	10	20	10	5	5	5

The English stones range from fine to coarse, the coarse grade being the least suited for the manufacture of a good grade of pulp, due to the fact that large voids are formed on the impression when coarse particles drop out and these voids cause a ripping off of fibers producing a free, ragged stock.

There is not this wide variation in grit sizes in the Ohio or West Virginia pulpstones examined and a great number of samples give approximately uniform grit composition. The fine stones, both English and American, make a good grade of pulp either for newsprint or book paper with the least amount of burring. By the correct use of the proper burr it is possible to get a good long fibered pulp. For a short fibered slow pulp, the fine stone seems best, but for a long fibered free pulp a coarse stone appears more desirable though the grade should not exceed the medium coarse. Between the limits of a medium and medium coarse stone a good pulp can be made but it is apt to be on the free side and as a result the grinding process requires close attention. This grade of stone is a good production maker and with the use of a fine cut burr will produce a good grade of pulp. Our own experience indicates that this grade stands more abuse than a finer stone, giving a lower stone cost. That is, stones having from 15 to 30 per cent grit retained on a 28 mesh screen, seem to have a longer life. This is probably due to a combination of cooler running, a different rate of water absorption or, perhaps, a different relationship of bond to grit particles.

The coarser a stone the greater the tendency to form a longer fiber, more tailings or rejections and the greater the need for frequent burring to reduce the tailings, and rolling to keep the stone from roughing up.

With a stone analyzing not more than a medium coarse grade, it is possible to make any grade of pulp. That is, the kind of impression on the surface of the stone determines the character of the stock produced and as long as this is carefully controlled the good character of the stone does not affect the quality of pulp to any appreciable extent. Of course, the natural tendency of a coarse stone is toward a free pulp and as a result, it is always the most efficient procedure to select stones according to the grade of pulp desired. In this way there will be less burring and a lower stone cost.

We are trying to point out that within definite limits the grit size of a sandstone is not the important consideration in the grinding of pulp. It has been our privilege while experimenting with various grit sizes in the manufacture of artificial pulpstones to observe the grade and production rate of pulp made on stones containing various grain sizes and it has been definitely decided that a good grade of pulp can be made from a rather large variety of pulpstones.

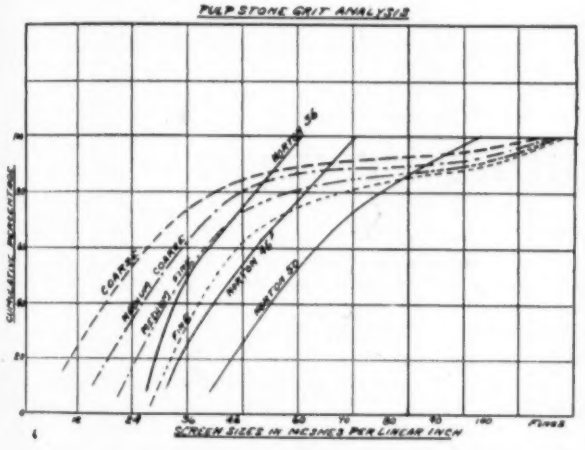
* Presented at Annual Meeting of TAPPI, New York, Feb. 21, 1929.
[1] The Norton Company, Worcester, Mass.

The finer sandstones seem to be harder and keep a good impression longer. The water absorption of a sandstone is of importance in this connection as stones soften up greatly depending upon the amount of water absorbed. This is directly proportional to the porosity and the denser a sandstone is, the slower the rate of absorption.

After a hard burring a sandstone produces a pulp gradually increasing in freeness until the impression is somewhat smoothed, when there will be a decrease in freeness. The pulp becomes very ragged and shivvy as it increases in freeness depending upon the grit sizes of the stone, and requires rolling in order to take down the high or irregular spots.

The Vitrified-Abrasive Grindstone

The Norton stone is much slower in its action, though much the same. The burring cycle is longer, often a matter of days instead of hours, and it is possible to allow the freeness to increase to a much higher figure than with a sandstone without making objectionable pulp. For this reason a different freeness standard should be set up for Norton stones. This will be taken up in more detail further on.



Reference to the chart will show graphically the natural pulpstone analysis shown in Table II in comparison with three Norton stones of different grit combinations.

For the sandstones it will be seen that except with the fine stones all contain a large percentage of coarse particles. Even the very fine stones contain some. The percentage of finer grit tapers off rapidly with all classes. In comparison it will be noticed that the Norton No. 36 compares with the medium fine, the No. 46 with the fine and the No. 50 is finer than any. Furthermore, except for No. 36 the coarse particles have been omitted entirely. The importance of this will be brought out later. Before this can be done, however, the difference in structure of the two types of stones must be discussed.

From the way in which sandstones are formed by nature a combination of a wide variety of sizes of particles would be expected. Also, as the layers were deposited the interstices between the grains were filled in with the fine flour which became the bond forming a fairly dense structure. All types of vitrified abrasive material, on the other hand, are more or less porous and the size and number of pores are as much under control as the grit size and hardness. The proper structure is obtained not by a long combination of a large variety of grit sizes but by shorter ones of fewer sizes, accurately determined to produce the greatest weight per unit volume. For this reason comparison by grit analysis does not present the whole picture, as artificial and natural stones of the same analysis would not act the same. The development of the Norton stone from coarser to finer grit combination has followed a definite program.

Effect of Burring

At the beginning reference was made to the fact that the use of burrs changed the whole relationship of grit size to the quality of pulp produced. The program followed in determing for the artificial stones the best grit combination was to select the one that would best enable the burr to produce the most efficient pattern in the stone. For the sake of brevity discussion will be limited here to the spiral burr as this is the one in most common use and as the theory would be fundamentally the same for the others also.

When it is considered that the effect of the burr is to reproduce in the stone a pattern resembling a file it is readily seen that the more regular these ridges are the more uniform the pulp will be. If the pattern is needed for its rubbing action and to provide clearance for the fibers drawn off, the sharper and cleaner the pattern is, the better the results will be. On a stone containing coarse particles a clean cut fine pattern is impossible. If a burr with 10 cuts to the inch is used and a large part of the stone is made up of grains held on screens 30 and coarser there will be only from one to three grains on the ridge of the pattern. When these break out large gaps are left and the ridge becomes ragged and has the appearance of a saw edge which rips off the fiber and makes pulp shivvy and undesirable. On the other hand, if most of the grains are finer than 50 there will be from five to ten grains in the ridge and when one breaks out the effect is not noticeable. For this reason, the coarser particles have purposely been eliminated in the vitrified abrasive stone.

While it is generally true, especially in hydraulic grinders, that any quality of pulp can be made with even medium coarse stones by proper burring, this is necessarily done at the expense of production and horsepower. A finer stone, however, is more efficient. Because of the greater uniformity of the pattern the face of the stone can be opened up more and a good quality of pulp made at a good rate of production and at a low horsepower per ton. This is particularly important in the case of the continuous grinder where a uniform cutting rate must be maintained. The pattern on a fine vitrified abrasive stone is maintained longer without roughing up or becoming dull. The absence of the gaps in the ridges results in a cleaner stock of more uniform fiber length.

The pulp to be expected from various sandstones has been discussed. Similarly in the case of Norton stones; with the same burr and under the same operating conditions a coarse stone will produce a free stock with little flour and a fine stone will produce a slow stock with more flour. However, there are important differences.

The pulp from a vitrified abrasive stone is more uniform in fiber length and for the same freeness figure has less flour than the pulp from a sandstone. Little of the very fine flour that goes through the machine wires with the white water is made under normal operation. Consequently pulp from a vitrified abrasive stone of a higher freeness figure than pulp from natural grindstones will give the same results on a paper machine. It is desirable, therefore, where freeness control is used, to set a higher freeness figure as a standard for Norton stones.

Stone Grit and Burring

While it is possible, by varying the burr used, to compensate for a coarser grit size in obtaining the grade of pulp desired, the finer grit combination makes it easier to obtain a slow pulp and more uniform results can be obtained by different operators. However, the burr is the important thing. While the grit combination aids in getting results it is dependent entirely on proper burring.

In the case of sandstones, some operators go too far in varying the burr to suit different types of stones in use at the same time. It is not so much the cut of the burr as the method of using it which governs both the quality and production. This can not be emphasized too strongly.

If all pulpstones were identical in grit and hardness, there would still be considerable difficulty in maintaining an even grade of pulp due to various grinding irregularities which are common to every mill, such as pressure variation, size and quality of wood, and burring.

Some way may be found to correct this burring variation to a large extent by having either a micrometer adjustment on the handle of the burr holder or a hydraulic pressure arrangement by which the stone can always be burred with the same degree of pressure.

The speed of the burring lathe is another important consideration, especially in regard to Norton stones, as the teeth of the burr are frequently dulled before the entire distance is travelled, which results in an uneven burring of the stone and an unnecessary wear of both stone and burr. Accordingly, in travelling across a large magazine stone, the burr should not be kept on for longer than seven to nine seconds for routine burring. Some mills take as long as 60 seconds to burr a stone.

The objection has been raised that a variation in speed would cross the threads of the impression on the stone. The answer to this is that few if any mills burr always at exactly the same speed and each mill burrs at different speeds. In looking at the impression of many stones we have never seen any evidence of thread crossing except where burrs of different cut were used. With the average magazine equipment it takes about one quarter of a second for a burr to go once around the stone. This gives some idea of the enormous speed at which the burr revolves.

Some pulp men have made the suggestion that all pulpstones vary in hardness, making it necessary to burr each stone as an individual proposition, and making it necessary to carry a large assortment of burrs on hand. In some instances this becomes a complex situation and each shift makes a different grade of pulp. In general it is best to strike an average on the stones and standardize on only one burr.

This will be more than ever possible with the use of artificial stones, as the grit combinations and degree of hardness are controlled and can be exactly duplicated. Results in such cases can be predetermined and maintained uniformly.

While there is a distinct relationship between the quality of fiber produced and the grit size of the stone it is dependent upon the choice of burr and even more upon the method of its use. In the case of sandstones the best results can only be secured by analysis and selection of the proper stone for the type of pulp to be produced, together with the burrs that best work in with this. The two go together and must be worked out on this basis. With the Norton stone, it has been possible to work out grit combinations that work with the burr in obtaining the most efficient results. In both cases success is dependent on the method of use and on variables that so far have been difficult of control. Methods must be worked out so that when the proper procedure has been determined it may be duplicated thereafter without change.

Status of the Training Program*

By Allen Abrams [1]

There are few types of manufacturing which have not felt the trend toward technical research and control—a condition quite different from that prevailing fifteen years ago. Because of this tendency industries have gone into the open market to compete for their technically trained men. As a natural consequence the powerful, forehanded groups have been able to pick the best men, leaving other industries in an unfavorable position.

Two years ago TAPPI recognized the fact that the paper industry deserved a more favorable situation in regard to its supply of technical men and that the technical man would do a better job for the papermakers if he built up an acquaintance with the industry while he was still in school. Thereupon a group of interested Tappists formed a committee and agreed upon a plan for putting their ideas into operation.

This plan has been outlined so often that we can only hope the effect of repetition will more than offset any weariness its presentation may occasion. Briefly stated, the idea is to get the student interested in pulp and paper work early in his college career, explaining to him what the industry offers and what it expects of him; giving him an opportunity during his summer vacations to go into the mill and work where he will absorb practical ideas and will get a vision of what there is to do. Thus he contacts with the workman, does his work, earns his wage and gets his point of view. He receives counsel when it is necessary and, upon his return to school, crystallizes his summer's education in the form of a theme.

Whereupon, after one or two summers' exposure to the rigors of a laboring job, he decides whether the industry appeals to him; and likewise the industry decides whether he is a likely candidate. Thus do pulp and paper mills look over prospective employees; and who can deny that this early and continued intimate association is turning ambitious young men toward these mills for their livelihood after graduation?

The practical working out of this plan has involved division of the pulp and paper district of the United States into nine geographical areas, in each of which is a Tappist as Area Director. This director acts as the connecting link between one or more high grade schools in his district, supplying young men; and with the pulp and paper mills offering summer positions for these men.

This is not as simple a job as it sounds. Colleges and universities must be fully acquainted with the plan and must be brought into sympathy with it; mills must be taught the value of such an apparently philanthropic enterprise. Briefly, this is propaganda designed to make both parties 'training-conscious" and you could scarcely find a task requiring more diplomacy and hard work.

The membership of this committee has included T. F. Spear, P. D. Bray, C. E. Libby, F. C. Peterson, M. A. Krimmel, J. D. Rue, J. J. O'Connor, B. M. Thomas, A. E. Bentham, H. L. Joachim, Ivar Lundbeck, H. G. Noyes and M. D. Bardeen. To them great credit is due. They have given freely of their time and talents, and have demonstrated fully the practicability of the plan. Through their efforts there were placed more than 100 men, representing about 30 schools, in 40 mills, during the past summer. These men engaged in all types of work, such as drafting, construction, paper machine operation, forestry assistant, electrician's helper, at rates varying from $.35 to $.50 per hour.

We have a file of letters from these men expressing their interest in and appreciation of their summer's work. We have their reaction to the industry; and, through the mills, we have an account of the student's work, ability and personality. Do you not see what a valuable piece of constructive planning this is, bringing the student close to the industry, helping him determine whether he and this type of work are in harmony; assisting him in finding just how and where he can best be employed after graduation? In short, the plan is right in theory and, best of all, in practice.

During the past year correlation of educational work has been in the hands of a competent committee representing the pulp and paper industry as a whole; and it seems logical that the rounded program can best be handled by a paid Educational Director, properly supported by committee and individual assistance.

* Presented at Annual Meeting of TAPPI, New York, Feb. 21, 1929.

[1] Member TAPPI; Technical Director, Marathon Paper Mills Co., Rothschild, Wis.

Improvements in Coated Paper Manufacture*

By Frank W. Egan [1]

The improvement of methods and equipment used in the coating of paper has advanced very rapidly. The quality that is demanded and the speed that is required to maintain low costs have provided problems for the coated paper manufacturer. These he has overcome by continually improving the equipment that he is using and by improving the methods of coating.

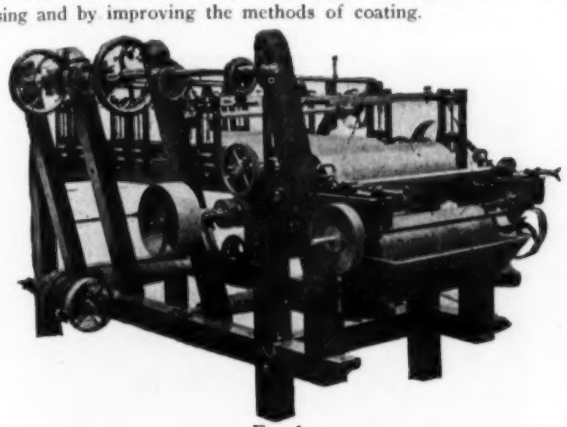


FIG. 1
Type of Wood Frame Flat Coater Used up to 1895.

The earliest recollection of a coating machine is back in 1850 when one was built for the wall paper industry; in 1851 four machines were built for the same purpose; in 1852 a coating machine was built for a coated paper manufacturer, who had been making colored coated papers by hand.

Up to 1895 the coating machines used were mostly built of wood, with the exception of the brush section.

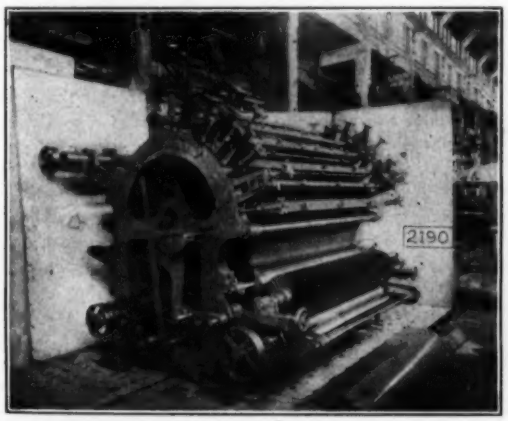


FIG. 3
Cylinder Coating Machine Applying Coating with Brush.

Various methods were used in applying the coating to the paper, among which were rolls with felt covering. Then the brush method came into use and is the standard method today.

Types of Machines

The first good coating machines were of the cylinder type. This type of machine proved very satisfactory from the standpoint of good coating and the absence of line wrinkling, as the coating cylinder gave a good lay to the sheet. The disadvantage of the cylinder coater was its slow speed, there being insufficient room for the proper amount of brushes and crank motions.

From the cylinder coater the manufacturer then went over to the incline bed coating machine. This machine was heavily constructed, had a slate bed and the crank movements were nested

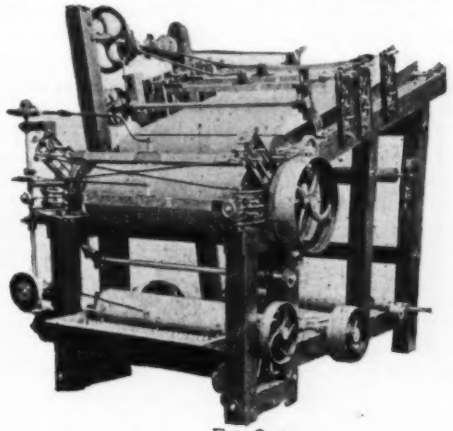


FIG. 2
Type of Inclined Coater Wood Frame Used up to 1895.

in pairs with adjustable cranks. The suction attachment was generally utilized and made a part of the coating machine proper.

Coating Pan Increased

The coating pan (with an agitator) and the coating roll were increased in size and the cylindrical brush for application of coating became a standard unit. A coating application roll, with

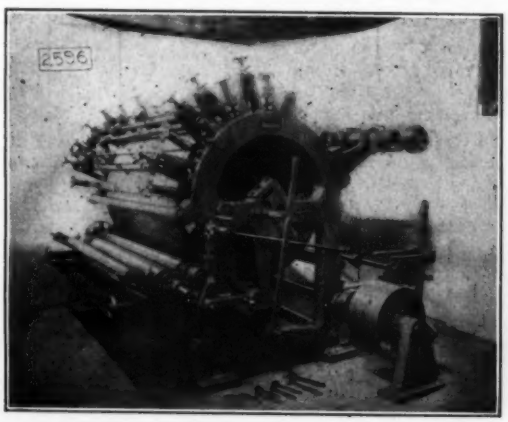


FIG. 4
Cylinder Coating Machine Applying Coating with Felt Covered Roll.

either a fixed or doctor brush preceded the rubber apron roll. The main brush motions were located on the inclined bed, which was slate, a rubber endless apron carrying the paper over the bed.

The unroll stand was enlarged to take two rolls of paper so that a flying paster could be made.

The Arched Bed Machine

A great deal of thought was applied to the inclined bed coating machine with the result that it led to an arched bed coating machine, including the best features of the cylinder and the inclined bed coating machine.

* Presented at Annual Meeting TAPPI, New York, Feb. 20, 1929.

[1] Member TAPPI; Sales Engineer, John Waldron Corp., New Brunswick, N. J.

The arched bed coating machine will handle goods up to 110 inches and wider, eliminating troubles due to slack edges and wrinkles. The frames and all smaller parts are proportioned much heavier than the old inclined bed coaters, so that in running up to high speeds and wide goods there is no possibility of undue stress or vibration.

Improved Mechanism

All of the main drives are assembled in ball bearings to reduce the friction load to the minimum, the ball bearings being installed in dirt proof housings to eliminate the possibility of throwing of oil. It is common practice in coating mills to oil a machine just before starting, and for a short time thereafter you may find particles of oil almost any place in the immediate neighborhood. The dirt proof housings are arranged with alemite fittings for grease lubrication.

The crank shaft assemblies are nested in groups of three shafts to a unit, located 120 degrees apart, thus giving a distribution of the load on the crank shaft and reducing to a minimum, the vibration. All crank shaft bearings are of the ball bearing type mounted in dirt proof housings and fitted with alemite lubrication. Each of the eccentrics is fitted with the same type of bearings.

The vibrating motion produced by the eccentrics is transferred to the brush rod through a regular straight line motion such as is found on the steam engine indicator.

The eccentrics are connected through a vertical link to a projection from the adjustable box supporting the brush rod. The linkage referred to is assembled as an integral part with the brush rod bearings so that when an operator adjusts a brush rod the whole remains in a relative position.

The brush rod bearings on the opposite side of the machine have small yokes containing adjustable screws and coil springs that pass back into the brush rods to fixed stops. These coil springs re-act against the brush rods on the opposite side of the machine, taking up all back lash and reducing wear to a minimum.

FIG. 5
Inclined Bed Coating Machine.

The bearings for all of the vibrating brushes are machined for the brushes in such manner that the top and bottom wearing surfaces are "V" shaped. The bearings are split and machined with shins inserted, the same as a marine bearing in a steam engine. There are "V" shaped plates made fast to the square brush rods having the same bevel as found in the bearing surfaces. If a brush rod bearing through wear gets a little slack, the mechanic removes one or more shins, and instead of just taking up wear in one direction as has been the former practice with the square bearing, he takes up slack on all sides with one adjustment. The bearings are provided with alemite fittings and oil felt wipers.

Another notable feature in the driving mechanism is found in the method of driving the coating head. There is no mechanical tie other than the rubber apron itself between the main drive of the machine and the coating head. By depending upon the rubber apron to drive the coating head, any slippage whatsoever in the rubber apron drive means that the same amount of slippage is routed to the coating head so that there is no variation in the quantity of coating per ream of paper.

Apron Drive and Operation

The rubber apron itself is driven on the suction end of the coater through a roller chain drive.

By substituting a special composition roll, which the paper

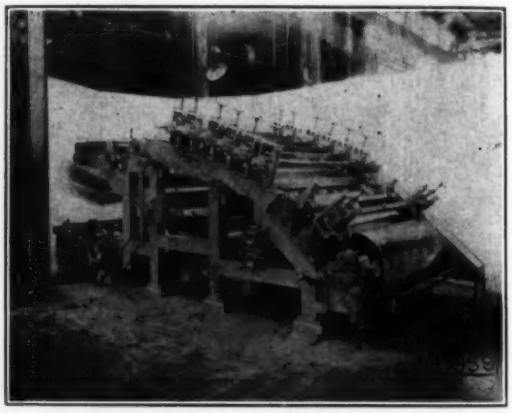


FIG. 6
Arched Bed Coating Machine.

passes over when coming in contact with the cylinder coating brush for the plain cast iron pipe roll formerly used, a distinct advantage is gained as it reduces the wear at the edge of the sheet. This reduces the amount of color getting under the edge of the sheet.

The arched bed is built up in three units so that it is possible to install a rubber apron without handling too much weight. The three units rest on a sub-frame which is adjustable in the vertical plane.

When an operator desires to put an end through the machine he pulls it under the apron in the regular manner, moistens the apron a little at the coating end, sticks the sheet on to the moistened surface, throws up the lever which drops the arched bed about ¾ inches, bringing the bed clear of the brushes, and then, by turning the machine over, the end passes through to the suction apron without pushing it under each of the brushes along the route. By throwing the lever back the bed comes up into place and the brushes are all in register.

We wish to again refer to the subject of driving the rubber apron. By installing this drive at the suction end of the coater it means that the under side of the apron is free to side guide the same as a regular belt found in a transmission line. The side guiding is taken care of by adjusting the drive roll and by side spool guides.

By pulling the apron over the arched bed means that the rubber apron does not have to be put on too tight, the result being longer apron life.

The driving roll carrying the rubber apron is in ball bearing mounted in dirt proof housings, and the bearings are adjustable and controlled by screws with worm gears and a cross shaft with worms. There is a small jaw clutch on the cross shaft separating the two sides. If an operator desires to adjust one side only he throws this clutch out, but if adjusting both bearings together he merely turns the small handle on the worm shaft. This cross worm connection allows the operator to release the tension on the rubber apron over the weak end and provides for its being

quickly brought back to its running position without any adjustment.

The necessary guide rolls are arranged to convey the goods through the machine. Directly under the cross shaft carrying the lifting arrangement for the arched bed a housing is mounted supporting the spring tension roll. This is similar to the spring tension rolls found in paper mill work. Between this roll and the coating head and mounted on one of the vertical ribs of the machine is located an adjustable roll so the operator may elevate or lower either end, according to the slack edge condition noted in the paper.

Tension Mechanism

The unroll stand provides for taking care of two rolls of paper, the running roll and the made ready roll, so that a flying paster can be made. A uniform tension rig, consisting of a tension roll with a mechanical arm, which works the tension band on the friction drum, eliminates the variation in the number of pounds of coating per ream of paper that occurs when the coating machine operator uses hand tensioning.

The automatic tension is operated through a surface tension roll which automatically takes care of the tension regardless of the size of the roll of paper.

Very little was done to the suction apron attachment except that it was made a part of the coating machine proper and the apron rolls were mounted in ball bearings in dirt proof housings and fitted for alemite lubrication.

Double Coater

The same story is also true with regard to the double coater as that of the single coater. Higher speeds and better results have altered the machine until today we find they are built of heavy cast iron frames on substantial base plates, with sturdy crank motions. The immersion or coating rolls are of a special construction so as to withstand as much as possible corrosion and the gritty action of the coatings. Wearing surfaces have received plenty of attention, which resulted in bearings of ample

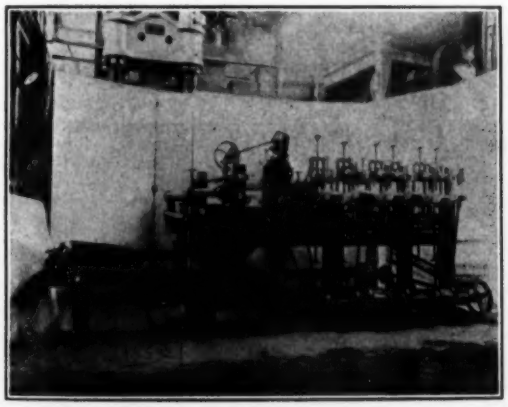


FIG. 7
The Type of Coater Used Today.

sizes and of special construction. The drives were made positive through the use of chains and machine cut sprockets.

Refinements and adjustments were added to allow for ease of operation and to produce a better coated paper.

Particular attention is paid to the floater so as to obtain the longest travel that is practicable. The proper amount of air is used and balanced to suit the conditions of static so that the sheet floats in a steady plane.

Care was used in selecting the suction apron rig at the far end of the floater, and it was found that to get a uniform coating per ream, it was necessary that the suction apron be driven by a positive chain drive.

Then it was sometimes found that it was necessary to have a fan with a short length of slotted pipe to blow down on the coated paper as it left the suction apron and entered the inclined chain festooner so that the loop formed without any difficulty.

Festooning Machine

A good many improvements have been made in connection with the festooning equipment as, for instance, in the incline which was an angle incline. This has been changed to an arched back incline which overcomes the swaying of the loop as it is brought up and put on the horizontal carrying chains. Then a short part of the first section of the horizontal chain is run at a variable

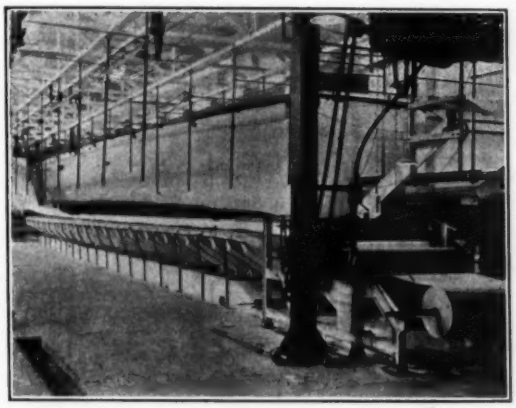


FIG. 8
A Typical Illustration of a Modern Coater.

speed which overcomes the jumping of the stick. This variable speed chain receives the stick from the arched back incline chain at the same speed, and then it automatically slows up and delivers it to the next section, a horizontal chain at its speed, which naturally is a slower speed. The incline arched back chain and sprockets, as well as the variable horizontal chain and sprockets, are of the refined block chain type giving a very good drive. This is a decided improvement over the old style link and cast sprocket arrangement, for, with the cut steel sprockets and the block chain, a very quiet, uniform method of looping the goods is obtained.

Where turn arounds are used a new rolled structural steel circle is found with cut steel sprockets and a block chain. This also provides for better operation.

In the take down end we find that a loop opener is provided so that the loop is opened by carrying the sticks forward and not by the method of pulling the paper and thereby moving the stick forward. Also, there are carrying down chains provided for carrying the sticks. The loop opener chains and the carrying down chains and sprockets are also of the refined type.

On the straight runs of chain the slack is taken up by weighted idlers which add smoothness to the operation and length of life to the chain.

Winder

Several changes have been made in the winding equipment with the result that today we find a winder equipped as follows: The paper as it leaves the festooning rack passes over an arched back equipped with side guides which can be slipped back and forth to suit the width of the paper that is run. This permits running up a better roll. Below the arched back are located four tension rolls which are equipped with gears and a hand wheel so that any degree of tension can be obtained. Also, each of the rolls is fitted with friction collars so that if it is desirable to stop one of these rolls to obtain greater tension this can be done.

The winder is of the center wind type with slip belt drive which gives a good hard roll.

If slitters are used they are located between the tension rolls and the winding shaft.

In some cases single riding drum winders are used which also produce good rolls but do not make as hard rolls as those produced on the center winder.

Some mills use double drum winders but find that to produce a hard roll they must run one drum faster than the other; this means wear on one drum due to the coating substances. This can be overcome by driving the drums through a floating gear with a friction disk face, operated through a spring clutch arrangement, with the result that most of the wear is on the face of the disk and not on the drum.

Drying System

Great improvements have been made in the drying systems used on coated paper. In the old days the method was to just place coils of steam pipe beneath the festoons which meant that any air movement that was obtained was due to the heat radiation from these coils. Today we find that the system generally used consists of a heater and fan which are placed outside of the drying line or to one side of the drying line, as the majority of the festooning lines for coated paper are run in an open room. A main supply duct is brought up from a point in connection with the fan outlet and is carried to a point in approximately the center and directly above the festooning machine, from which two branches are taken off and carried almost the full length of the festooning machine. The bottom of the branches are equipped with slots either in a single straight line or staggered to suit the width of the sheet. Air is introduced down into the festoons from these slotted outlets and the velocity from these outlets is determined by the weight of the goods that are to be dried and the depth of the loops in the festooning machine. Recirculating ducts are carried from any one or several points directly beneath the festooner or from the side of the festooner, back to a mixing chamber in connection with the heater. Fresh air is brought from either the apparatus room or from out doors and is mixed with the recirculated air which then passes through the heater and fan into the supply system.

The exhaust system consists of an outlet duct which is carried from a point near the wet end of the line and is connected to a fan which discharges this air to the outside atmosphere.

moisture content in the coated paper after it has passed through the festooning machine and is put in rolls. The curling of the edges can be overcome and the proper moisture content in the sheet can be maintained by installing a conditioning unit which consists of a fan, heater and a conditioning chamber with air supply, return and exhaust lines, controlled by wet and dry bulb temperature regulators. The dry bulb regulator automatically

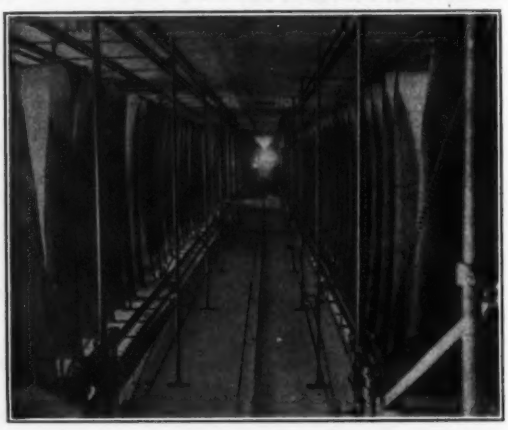


FIG. 9
Typical All Metal Coated Paper Festooning Lines (Air Supply Ducts Above Festooner).

maintains the dry bulb temperature by controlling the amount of steam that is used in the heater. The wet bulb regulator controls the wet bulb temperature by operating the fresh air damper and also a steam jet. With this arrangement the proper humidity is maintained with the result that curling troubles are eliminated and a good coated paper is produced. This type of equipment is very easy to operate for the reason that the controls are set at the temperatures desired and left in that position, and they automatically control the equipment at the desired temperatures with a minimum variance.

Today we find printing establishments putting conditioning apparatus into their printing rooms and their storage rooms. It would also help the coated paper manufacturer if he would put conditioning equipment into his storage rooms to keep the paper in proper condition, after it comes from the conditioning tunnel. if it is not wrapped immediately in waterproof wrappings. This would materially help the sale of his products, as one of the greatest problems that printers have is the off register and curling of the sheet that they find is ever present in coated paper that is not conditioned.

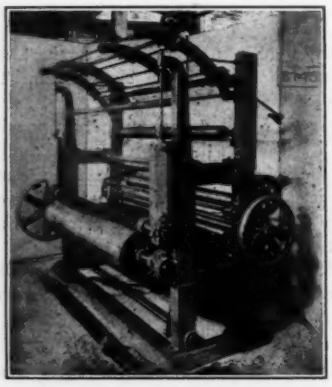


FIG. 10
Single Drum Winder.

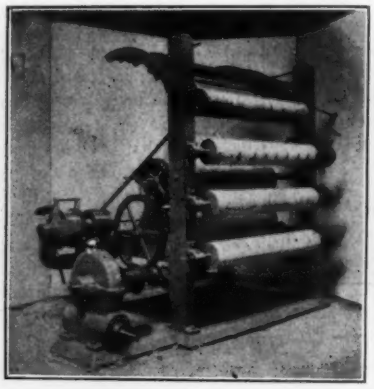


FIG. 11
Center Winder.

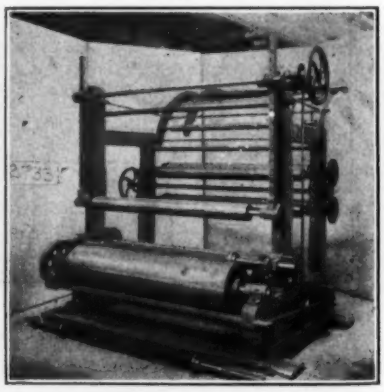


FIG. 12
Double Drum Winder

In laying out a drying system for a coated paper line it is necessary that this system favor the center of the sheet. The amount of air and the velocities used should be carefully proportioned for the kind of paper coated so that a uniformly dry sheet is the result.

Conditioning

One of the greatest troubles in our experience in coated paper is the curling of the edges and also the maintaining of the proper

Lithographic Paper Problems*

By Robert F. Reed [1]

The remarkable growth of the lithographic industry during recent years has been the result of a number of factors, among which the general adoption of the offset process is of first importance. The advantages inherent in this process, which have influenced its development, include economy in preparation of the printing surface, ease of make-ready, speed of printing, ability to print half-tones on matt and rough surfaced papers, and the pleasing results obtained, especially in color. As in the case of every new development, the adoption of offset lithography has been attended by a number of technical difficulties. While some of these have been overcome, many remain and constitute problems in economical production. Among these, and of primary importance, are the problems resulting from a lack of knowledge relating to the characteristics of paper necessary for the best results in offset lithography and the failure to utilize available knowledge of the relationship between paper and atmospheric conditions. It is the object of this discussion therefore to emphasize the problems related to lithographic printing on paper, especially by the offset process, and to indicate, if possible, the steps which should be taken to solve them.

Register Troubles

The known factors which contribute to the production of misregister in offset lithography may be listed as follows:

1. The lithographer is required to print on many different types of paper of various compositions, surface characteristics, and weights.

2. Large sheets (up to 45 x 65 inches) are handled by automatic feeding methods.

3. Natural weather conditions are constantly changing with resultant variation in the relative humidity of the atmosphere which determines the "condition" of the paper.

4. A small amount of water is deposited on the sheets by the rubber blanket or plate, depending on whether the printing is offset or direct. This moisture tends to change the "condition" of the paper and cause expansion.

5. The pressure necessary to transfer the ink impression from the rubber blanket to the sheet takes the form of a uniform squeeze along the line of printing contact. This pressure is dependent on the clearance between the cylinders of the press and the compressibility of the offset blanket and may under extreme conditions be equivalent to as much as 100 pounds per square inch.

6. In multicolor printing by present methods the paper must pass through the press several times, depending on the number of colors to be employed (usually from four to eight).

Analysis of these factors reduces the number of ultimate causes of misregister, as far as paper is concerned, to only two, the first being the "condition" of the paper involved (amount and distribution of moisture in the sheets), and the second the tendency of the squeeze between the cylinders of the press to mechanically deform the sheets and alter their dimensions.

Paper usually arrives in the lithographic pressroom packed in cases and protected as well as possible from atmospheric changes during transit by moisture proof linings. Usually it contains approximately the same amount of moisture as when packed, which was determined by the conditions to which it was exposed prior to and during packing. The moisture contained in the pile is distributed fairly uniformly, so that when first unpacked the edges are straight and the top sheets lie flat. This desirable state of affairs persists only if the paper happens to be in equilibrium with the pressroom atmosphere. If this is not the case, the exposed edges of the paper begin to absorb moisture and expand, becoming cockled or wavy, or else they give off moisture and contract, causing the sheets to become baggy. These extremes are well illustrated by the actual photographs shown in Figs. 1 and 3 in contrast to Fig. 2 which shows paper in ideal "condition" for lithography. Paper, if printed before it becomes conditioned to the pressroom atmosphere, will not register in succeeding printings when it will have had time to readjust its moisture content.

If paper has become cockled or baggy through gain or loss of moisture at the edges, misregister is likely to occur because the sheets fail to contact properly with the stops and side-guide of the feeding device. The formation of wrinkles may also re-

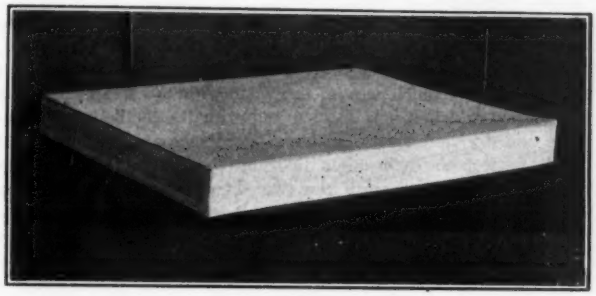


FIG. 2

The same paper as shown in Fig. 1 as it appears after being conditioned for two hours in the atmosphere of 50 per cent relative humidity.

FIG. 1

Paper as it appears after being taken from the case in which it was received and standing for one hour in an atmosphere of 50 per cent relative humidity.

FIG. 3

The same paper as shown in Fig. 2 as it appears after standing for one hour in an atmosphere of 22 per cent relative humidity.

* Presented at Annual Meeting of TAPPI, Feb. 20, 1929.

[1] Member TAPPI; Research Director, Lithographic Technical Foundation, Inc., University of Cincinnati, Cincinnati, Ohio.

sult and the sheets are forcibly deformed by the pressure exerted on them during printing, in some cases to such an extent that they will never again lie flat. Lithographers have therefore learned from sad experience to subject their paper to a system of conditioning, which consists of hanging or racking it in lifts of a few sheets each in order to allow the pressroom air to circulate about it and distribute its moisture uniformly, before attempting to print on it. When placed again in the pile, this conditioned paper will lie flat so long as the relative humidity of the air surrounding it remains approximately constant, which, of course, is usually not very long.

It has been found by experience that if the moisture on the printing plate is properly controlled, that is, maintained at the practical minimum, little difficulty is encountered due to its action on the paper if the atmospheric conditions are maintained constant, especially in offset printing. If changes do occur as a result of too much water, the only recourse of the lithographer is to recondition his paper before proceeding with the job.

Another factor influencing the flatness of paper is its inherent two-sidedness, which varies somewhat with the treatment of the pulp from which it was formed and with the methods of formation and drying. Fibers on the wire side are arranged differently with respect to each other than of the felt side. Variations in moisture content affect the two sides differently and unequal stresses are set up which cause the sheets to curl. Inherent curl of this type occurs more often in the harder types of paper, especially when their moisture content is low. At higher humidities this curl is not so evident, since moisture causes paper to become limp and its own weight is often sufficient to overcome the existing stresses. All printing and lithographic paper should be so made that stresses on its wire and felt sides will be equal when it is conditioned in the atmosphere of the pressroom.

The rather deplorable fact must be admitted that paper handling methods in the lithographic industry today are largely based on rule of thumb. This condition results in neglect of many important factors, such as

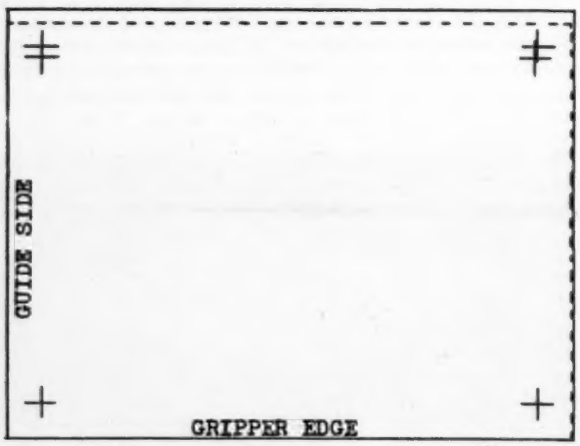


FIG. 4
Diagram illustrating misregister caused by increased atmospheric humidity and consequent expansion of paper between two color printings.

1. Continual variation of natural atmospheric conditions
2. Effect of temperature variations in heated buildings on the relative humidity
3. Variation in temperature and humidity due to different conditions during working hours and at night.

Relatively few operators who are responsible for paper handling have more than a hazy idea of the science involved. This is plainly evidenced by the appearance in print from time to time of astonishing theories and naively given misinformation on the subject by men of undoubted experience. On the other hand, some have studied the subject and have been convinced that a system of exact humidity control in the pressroom, together with paper conditioning will solve all of their register problems. In such cases, they have neglected to consider the second ultimate cause, namely, "mechanical deformation".

When a perfectly flat sheet of paper is fed between the cylinders of the offset press, the gripper edge is first engaged and passes through under no stress except that of compression. During the period of travel, however, tension is set up along the line of

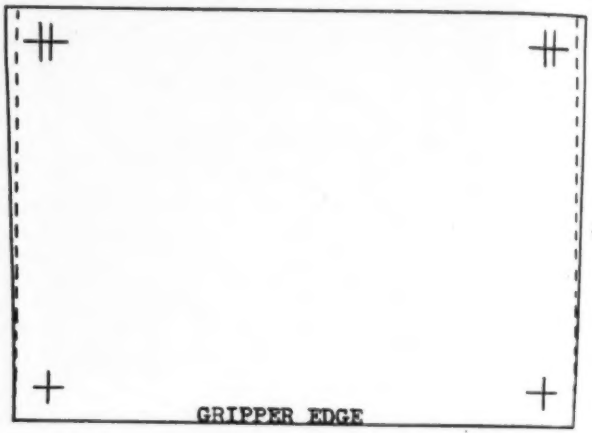


FIG. 5
Diagram illustrating mechanical deformation of paper during one color printing and its effect on the register with a second color.

contact, so that when the back edge of the sheet receives the pressure, it is under considerable lateral tension. This tension is often sufficient to stretch that portion of the sheet near its back edge beyond its elastic limit and to result in its permanent deformation. This permanent deformation, though most serious, is not the only essential to the occurrence of this type of misregister, since paper stretches considerably within its elastic limit, and, obviously, if two successive colors are applied with sufficiently different pressures, the sheet will be deformed in one case more than in the other. It is hardly conceivable that any two colors can be printed with exactly the same pressure and the only means available to the lithographer by which he can minimize misregister due to mechanical deformation is the use of minimum pressures. Considered separately, "weather stretch" and "mechanical stretch" can be distinguished from each other by the type of misregister they produce. Since an increase or decrease of moisture in paper causes the greater change to occur in the "cross" direction, lithographic paper is usually cut with the grain running the long way of the sheet so that the greater changes will occur in the direction of the shorter dimension. Misregister, due to changes in atmospheric conditions between two printings, provided in each case that the moisture is uniformly distributed in the paper so as not to introduce the factors of cockling or buckling, will therefore occur principally at the back edge of the sheet, one color being "out" in the direction of travel on the press. In the case of purely mechanical deformation, provided of course that the sheet is flat, the misregister will also be evident at the back edge of the sheet but one color will be out in a direction at right angles to the direction of travel. These characteristic types of failure to register are illustrated in Figs. 4 and 5.

Now if we consider that misregister may result from various combinations of humidity changes, lack of uniform moisture distribution, mechanical deformation, and inherent curl, the problem of diagnosing the causes of trouble in any given case becomes a truly complicated one. It is not strange therefore that confusion should result and that there should exist a variety of contradictory opinion.[2] To minimize the difficulties in securing reg-

ister, all known factors should be considered and the following precautions taken:

a. The manufacture of paper having a minimum tendency to expand and contract with changing moisture content. This can be accomplished by avoiding hydration of the pulp fibers in the beater and securing the maximum uniformity of distribution of the fibers in the sheet.

b. Maintenance of a uniform atmospheric condition in paper storage and pressrooms.

c. Maintenance of an effective system for conditioning paper in the pressroom atmosphere or, if possible, an arrangement with the source of paper supply whereby the paper will arrive in the pressroom containing an amount of moisture that will be in equilibrium with the pressroom atmosphere.

d. Careful adjustment of pressure between the cylinders of the press so that printing may be done with a minimum of pressure.

e. Paper should be as rigid as possible especially in the machine direction without this affecting its other desirable properties in order that it may resist mechanical deformation. This involves control of beater sizing and indicates the desirability of a relatively hard sized paper.

Little thought so far has been given to the last of these precautions, which, in the writer's opinion, deserves the careful attention of manufacturers of paper for the offset lithographer. Means should be found to increase the rigidity of such paper in the machine direction without impairing its strength in the cross direction. This could readily be made a matter of specification based on extension under less than the breaking stress.

Greasing and Scumming

In lithography the printing plate consists of a thin sheet of either zinc or aluminum, the grained surface of which is made to carry a greasy, ink-receptive design. The areas surrounding and defining this design are rendered receptive to water and non-receptive to ink by chemical treatment. During printing, the non-design areas are kept moist with a film of water which repels the ink from these areas. Greasing or scumming occurs when the water film fails to properly reject the ink, and the non-design areas begin to print. This condition develops when

a. The non-design areas of the plate lose their ability to resist being wet by the ink.

b. The water and ink tend to emulsify with each other.

The chemical treatment which renders the non-printing areas of the plate ink rejecting consists in the application to these areas of a solution of gum arabic containing phosphoric, chromic, or tannic acid, or an acid salt such as an acid phosphate or bichromate. This operation is termed "etching" or "desensitizing" and the acid-gum solution is called the etch. Its purpose is to deposit on the surface of the plate a very thin water absorbent film which adheres tightly to the metal. This film is maintained by adding to the dampening water, which is supplied to the plate during the printing operation, a small amount of "etch".

The "desensitizing" film is stable only under a limited set of conditions. Dilute hydrochloric, nitric, and sulphuric acids will quickly remove it, as will also alum, soaps, and alkalies. These must therefore be avoided. Since alum is used in the sizing of paper and since alkalies are used in preparing coating materials, care must be exercised to prevent their remaining as such in the finished paper. In offset lithography the rubber blanket runs in contact with the dampened printing plate, and subsequently comes in contact with the paper, carrying a thin film of water. Part of this water is transferred to the paper and soluble acids or alkalies, if present in the paper, will gradually be carried back to the plate and cause the non-printing areas to lose their protective film and to become grease receptive.[2] Acids or alkalies, although sometimes found in paper, are not the only substances which may cause scumming. Many samples, representing paper which was said to be the cause of scumming, have been tested for the presence of free acid or alkali and none found. Still the scumming went on, for no apparent reason. What is not usually taken into consideration is that the ink and water on the plate are prevented from emulsifying by the high interfacial tension between them. Any lowering of the surface tension of the dampening water will decrease this interfacial tension and cause a tendency of the plate and water to emulsify, whereby a scum of ink is deposited on the non-printing parts of the plate. In some cases this scum is plainly visible and prints on the paper. In other cases it is so slight as to be invisible on the plate but is evident as a deposit of ink on the blanket which gradually increases, often to such an extent that a visible tint is transferred to the paper. The "scummy" blanket also reacts on the non-printing areas of the plate, tending to destroy their ink resistance. Washing the blanket at intervals to remove this scum tends to cause the rubber to soften and swell, which increases the pressure, shortens the life of both the plate and blanket and increases the tendency of the blanket to "pick" the surface of the paper. For this reason paper must be free from water soluble soaps and from any other polar materials which tend to lower the surface tension of the dampening water. This precaution, of course, applies particularly to coated papers. A simple method of qualitative testing for polar substances is as follows:

A piece of the paper to be tested, approximately two inches square, is folded, placed in the bottom of a clean test tube and is just covered with distilled water. Another sample of paper of known, satisfactory lithographing qualities is treated in the same manner and the two samples, after soaking for two or three minutes, are simultaneously shaken vigorously. Any appreciable decrease in surface tension that occurs will be evident from the relative stability of the foams produced.

More accurate results can be obtained by measuring the actual surface tensions of the solutions. Laboratory apparatus for this purpose is available and a standard method for such a determination could easily be established. From the work already done, it is tentatively suggested that under the conditions of this test the surface tension of the water should not be lowered more than 10 per cent by contact with lithographic paper. The exact limit will be determined by experience.

Greasing may also be caused by the presence of loose dirt or grit, loosely bound particles of filler, or by fuzz or lint on the surface of paper. Such conditions result in

a. Lifting of loose fibers or particles from the surface of the paper by the ink in which they gradually accumulate, and, being carried back to the plate and rollers, clog them and prevent proper transfer of the ink. The result is threefold:

1. The prints are marred by white spots where the loose particles have been detached from the surface of the paper.
2. The prints become dirty and uneven because of improper transfer of the ink.
3. The printing image on the plate becomes "filled up", necessitating frequent washing up, with consequent damage to the work and increased tendency of the plate to scum.

b. Lifting of gritty particles by the ink or by the blanket, from which they are transferred to the surface of the plate, resulting in abrasion which destroys the ink rejecting film and consequently causes scumming and filling up of the design.

The control of lint, fuzz, and loosely bound filler rests with the paper maker. The known methods by which they can be minimized consist of regulation of beating and beater sizing, application of surface sizing where possible, and proper conditions of calendering.

Relations of Paper and Ink

Lithographic ink dries entirely by oxidation of its varnish vehicle. Its rate of drying is dependent on:

1. Character of vehicle
2. Character of pigment
3. Amount and kind of drier

[2] See "Wavy Paper," TAPPI Special Report No. 84, and "The Effect of Grain Direction in Lithography," TAPPI Special Report No. 72.
[3] See "Smudging in Lithographing with Coated Paper," TAPPI Special Report No. 65.

4. Thickness of ink film printed on the paper
5. Capillary absorption of the ink vehicle by the paper which determines the relative surface of ink exposed to the oxidizing action of the air
6. Temperature.

The ink manufacturer endeavors to eliminate the drying variables introduced by the various pigments he is required to use, by careful adjustment of the character of the vehicle and the proportion of drier. He also attempts to secure uniformity of penetration by standardization of the body or mobility of the ink. The press operator in turn has the responsibility of securing the desired result with these inks on any character of paper which the customer demands. He is required to coordinate the characteristics of the ink with the surface characteristics and condition of the paper by making the necessary additions to his ink to produce the proper body and working qualities at the prevailing temperature, and by controlling the amount of ink transferred to the paper. The variable which neither ink manufacturer nor pressman can control is the capillarity of the paper with respect to the ink vehicle. This property may be termed "ink penetration" or "ink resistance" of the paper, since it determines the degree to which the ink vehicle sinks into the paper or is held on its surface during the period of drying. Ink resistance varies in different types of paper and also in the opposite sides of the same paper.[4]

It is known that ordinary "water resistance" or "sizing" tests which determine the rate of penetration of writing inks or water solutions do not indicate the properties of paper that control its reception of printing ink, since they measure only its capillarity for water. Tests should be developed and applied which will insure uniformity of penetration of the oily ink vehicle in each type of paper which is manufactured.

It must be borne in mind that the "ink resistance" of paper depends also on the moisture content of the paper fibers and consequently on atmospheric condition. Paper which, when lithographed on a dry day, yields a flat lifeless print, will yield a brighter, snappier print with the same ink and at the same temperature on another day when the humidity is high, and the latter print will be the slower to dry. There is no evidence that atmospheric humidity alters the drying rate of inks appreciably except through its effect on the capillarity of the paper fibers for the oily vehicle. Naturally, in moist weather when the ink is absorbed slowly, there is increased tendency to offset. For this reason tests to determine ink resistance must be made under standard humidity conditions.

Ink resistance could be controlled in the manufacture of paper if factors which affect it were known. These factors should be determined by research. However, the physical chemistry of the constituents of paper indicate the probabilities in this direction. Lack of hydration of the fibers, high degree of rosin sizing, low moisture content, and, to a certain degree, porosity, should tend to increase the rate of ink penetration, while hydration, slack sizing with rosin, high moisture content, low porosity, and the use of starch or gelatin, either in the beater or as surface sizing, should decrease it. The effect of loading materials and pigments used in coating compositions, as well as the coating compositions themselves, should be investigated.

An important factor in all types of printing is that of static electricity, which, although always generated in paper during the printing operation, only gives trouble during the seasons when artificial heat is used in the pressroom.

Poster and Label Papers

While considering the rate of penetration of inks into paper, the fact must not be lost sight of that water penetration is equally important where the paper is to be submitted to pasting or gumming operations before or after printing. In the case of poster papers, it is highly important that the moisture in the paste should not penetrate the paper rapidly enough to cause it to expand appreciably during the process of posting. If this happens, the paper is put under excessive tension when the paste and paper become dry, resulting in cracking and consequent destruction of the advertising value of the poster, especially in dry weather. Where paper is to be gummed, the gum must remain largely upon its surface until dry if it is to be of value as an adhesive. These factors are governed by the extent to which the stock is hydrated and by the degree of beater sizing. They should be controlled by means of sizing or water resistance tests.

It must be admitted that the existing problems in the manufacture of paper for the lithographic industry and of the proper selection and handling of paper by the lithographer in order to secure the best results, are many and complicated.[5] A number of them have never been subjected to the exhaustive research which they demand. It is evident to both paper manufacturers and lithographers that present hit and miss methods, which are due largely to lack of knowledge of the properties of paper and of the requirements of lithography, result in a tremendous economic waste to both industries. This is true not only of lithographic paper but of all printing papers as well, and many of the problems which exist are common to all branches of the printing industry.[6]

Summary

The economic demand of the lithographic industry requires that practically all types of paper be capable of being printed by the offset process. The difficulties encountered in the lithographing of paper are discussed under four headings, namely:

1. Register troubles, caused by
   a. The expanding and contracting of paper with changing atmospheric humidity.
   b. The lack of rigidity of paper and its tendency to be mechanically deformed in the printing process.
   c. Non-uniform distribution of moisture throughout the sheet.
   d. Inherent tendency of paper to curl.
2. Greasing or scumming, caused by
   a. Destruction of the ink resisting character of the non-design areas of the printing plate by chemical action.
   b. The presence of soluble polar substances which dissolve in the dampening water and lower its surface tension, thereby tending to cause emulsification of the water and ink.
   c. The presence of fuzz or lint, or of loosely bound particles of filler, which are transferred to the blanket, plate, and rollers, necessitating frequent washing up, which tends to damage the work and deteriorate the blanket.
3. Difficulties related to the securing of satisfactory printing on paper, caused by
   a. Lack of uniformity of the moisture content of paper.
   b. Lack of uniformity of the ink penetration rate or "ink resistance" of paper.
   c. Differences in temperature and consequent differences in the mobility of ink.
   d. Static electricity.
4. Problems in the application of adhesives, caused by
   a. Variations in degree of hydration of the paper stock.
   b. Variations in degree of beater sizing.

The difficulties are discussed from the point of view of the causes to which they may be traced, the known means by which they may be controlled and the unknown factors involved. A program of research on the problems related to paper for lithographic purposes is suggested.

[4] "Resistance of Printing Papers," E. O. Reed, Technical Association Papers, Series XI, No. 1, p. 144, and Paper Trade Jour. 86, No. 12, March, 1928, p. 54-55.

[5] "Offset Paper," TAPPI Special Report No. 92, and "Paper for Offset Lithography," by R. F. Reed, Paper Trade Jour. 87, No. 25, Dec. 20, 1928, p. 68.

[6] "Paper, and the Influence of Pressroom Conditions," by Otto W. Fuhrman. Presented at the annual meeting of the American Society of Mechanical Engineers, New York, Dec. 3, 7, 1928. Paper Trade J. 87, No. 24. P. 54

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

Recent Changes in Income Tax Law and Procedure*

Particularly as Concerns the Paper Industry

By Henry B. Fernald, C. P A.[1]

The Revenue Act of 1928 was enacted May 29, 1928. It is materially changed in form from the preceding Acts. It presents a complete rearrangement and reclassification of subject matter, as well as a quite extensive rewriting of its various provisions. All of this is intended to give a law more logical in its arrangement, more definite in its statement and in better form for reference.

It presents as Title I a new Income Tax Law for 1928 and subsequent years. This Title does not apply to prior years, but leaves prior years' income tax returns to be settled under the prior Acts, except as these are amended by the provisions of Titles III, IV and V of the present Act. On the other hand, the Estate and other Miscellaneous Taxes prescribed by the 1926 Act are continued in effect except as these are modified by Title II or other Titles of this 1928 Act.

I shall here confine myself to the changes which this Title I makes as to 1928 and future years, except as I may have occasion incidentally to refer to some special change which may apply to prior returns.

In general, the law is intended to be in substance the same as preceding Acts except as to the various special points where some special change is intentionally made. However, any change of wording or even of punctuation which is made in any provision of a law is apt to make what will be found a real change in some particular cases. There are always those border-line cases where the presence or absence of a word or the position of a comma may be crucial. No provision can be rewritten without the probability that some cases will be affected thereby. Often a decision under one section or paragraph is determined by the wording of some other section or paragraph. Therefore, we cannot be sure that because one provision remains unchanged there may not be a change in its application to this or that case by reason of a change which has been made in some other provision of the law. Therefore, while we may say that in general substance the law remains the same, we cannot be sure that there may not be in the rewriting of its provisions some change of material importance to our own particular affairs.

The New Regulations 74

We may even say that there must be many of these changes which are giving the Internal Revenue Bureau much concern in order to account for the long delay in issuing its regulations under this Act. Certainly the comparatively few points which at the time of its enactment were noted as changes in the law could not account for all this delay, especially when most of such changes were made at the behest of the Treasury Department, presumably with some rather clear idea of what they would mean in practical application. We shall therefore probably find, if not now then after the passage of a few years, that many of the changes in wording which at the time the Act was passed were considered as merely changes in form, do have material effect on the incidence of the tax.

Please recognize that I here speak under the real disadvantage of not knowing just how the Treasury Department proposes to interpret many of these changes. The new Regulations 74 are not yet available from the Government. The special tax services are publishing these as approved on February 15th. I have had opportunity briefly to glance over them but not to study them carefully. So what I here say is practically without their benefit.

It would be easier to state the real changes which were made by the Revenue Act of 1928 if we knew more definitely the real provisions of prior Acts, but the courts are still busy with their interpretation and the Treasury is still trying to tell us its latest thought as to what they mean.

Compared With Prior Acts

We might proceed exhaustively to a comparison of the language of the respective Acts, pointing out each change of a word here or a comma there; each change in grouping or arrangement of items; each new provision written into the law and each prior provision omitted; each case where specific provisions of prior Acts are now left to be covered by Treasury Regulations and where prior provisions of Treasury Regulations are now written bodily into the law. A good basis for such a study is furnished by the "Comparison of the Revenue Acts of 1926 and 1928" prepared by Clayton F. Moore, Clerk of the Ways and Means Committee of the House; copies of which have been obtainable from the Government Printing Office in Washington at 30 cents a copy. Another useful document is the compilation of "Internal Revenue Tax Laws" as they were in force July 1, 1928, similarly obtainable at the same price.

Such a comparison forms an interesting study in the use of

* Delivered at the Convention of the Cost Association of the Paper Industry, Waldorf-Astoria Hotel, New York, Feb. 19, 1929.

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language and is probably good mental exercise. It might be substituted in place of cross-word puzzles, although I doubt if it would ever become a national pastime. One who engages in such a study will probably emerge with a great respect for language as a means of concealing thought.

The various changes made will generally fall under the following classifications:

1—Changes in form which are intended to give a law which can be more readily referred to and to give to it a more consistent arrangement:—Probably this result is accomplished even though at the expense of making more difficult a reference from the present to prior Acts.

2—Restatement of provisions for the purpose of making them more consistent, more grammatical or more euphonious:—We may grant this result is accomplished, although it seems rather hard to take a sentence or phrase, which has perhaps only recently, after many years of dispute, been given a final court determination and recast it, with the resulting uncertainty as to whether the same court decision would apply to it in its newer form. It also makes it much more difficult to locate which changes in the law are intended to be changes in substance as distinguished from mere changes in form. A study of the Act will show that often provisions which were stated at the time the law was enacted to be mere clerical changes conceal within themselves a change in substance which has thus been slipped through largely unnoticed.

3—Restatement of provisions for the express purpose of stating more clearly what it is now contended the prior law meant to say:—It may be years before we get final interpretation in the courts of just what the prior law should be held to mean, and probably several more years before we shall know whether or not the new provision means the same as the old.

4—Changes which are intended to be substantial alterations in the prior law:—Such changes we might in turn classify as representing (a) those which have to do with the computation of net income and consequent tax; and (b) those which have to do with administrative provisions of the law,

There are probably a large number of taxpayers whose affairs will be in no way affected by the changes which are made as to the computation of taxable income or as to the administrative provisions of the law. There are many others whose accounts might on a careful examination be found to be to a greater or less degree affected by these changes but who will probably prepare their returns in the same manner as heretofore and will have their returns audited, accepted and passed on the same basis as under the prior Act. There will only be a very small minority of the taxpayers of the country that will ever note any material changes which the present law makes.

There are changes which if they happen to affect any particular taxpayer may be important. For example, we may note in Section 23 (k) that the special provision regarding depreciation, where life tenant and remainder men are concerned, now applies to "property", whereas, the prior law applied only to "improved real estate". I doubt if the use of the word "property" instead of "improved real estate" is intended to be a substantive change. Yet the change of these words may make an important difference to some taxpayer.

Corporation Rate Now 12 Per Cent

The average taxpaying corporation will probably note particularly that the corporation tax rate is reduced from 13½ per cent to 12 per cent; but proceed otherwise to make up its return in the same manner as heretofore. In this it will probably not be very far wrong. If it does this its tax return will probably not vary more from the Act of 1928 than its prior return did from the Act of 1926. We need not pretend that the tax return of the average corporation is prepared on the basis of a careful study of all the provisions of the law, regulations and decisions which would be applicable to each of the multitudinous transactions which are to be reflected in that return. The man who tries conscientiously to study the law and regulations before he makes up his return is very apt to feel before long that he is so lost in the mazes of technical wording that he will do better to make up the return as he feels it ought to be made than he will to try to follow the confused and indefinite ideas which his study of law and regulations inspires.

Treasury Department's Delay in Issuing Regulations 74

This is not the condition which ought to obtain, but it is the condition which unfortunately does obtain. Naturally a taxpayer finds his conscience relieved of any burden he might otherwise have upon it when he realizes that not even the Treasury Department itself ever expects to be able to say what the law really means, since it clearly reserves to itself the right at any time to amend, annul or reverse any regulations which it has issued and to do this with a retroactive effect, public notice is served on the taxpayer that he cannot rely on Treasury Department interpretations even as to transactions made while such regulations or decisions were in effect. If he follows them he follows them at his peril, whereas if he is guilty of intentional disregard of these rules and regulations he is subject to penalty. For over half a generation the Treasury Department has been endeavoring to interpret our income tax laws, yet the Department has taken over eight months to try to make up its mind as to the proper interpretations to be written into the regulations under the 1928 law and has not yet gotten these in shape for distribution to taxpayers, with the Ides of March less than a month away.

I know of no way in which the Department could more effectively say to the taxpayer that he need not consider these regulations when he prepares his return. Perhaps there are those taxpayers who will burn the midnight oil in order to do this, but few will feel any burden on their conscience if they fail to do it, particularly when they know that any provision of these regulations as now issued may be completely changed before the tax return comes to audit.

This is not as it should be. The regulations should not be disregarded and disesteemed. Yet I know of no way in which to tell you how to know what these regulations really provide unless it be by adopting the old rule for learning any foreign language in twenty-four hours, which is to divide the language into twenty-four parts and learn one part each hour.

Extensions of Time for Filing Returns

Extensions are possible. The new Act contains the same provision as previously whereby extensions of time for filing income tax returns may be granted and the regulations provide that "Application for extensions of time for filing income tax returns should be addressed to the collector of Internal Revenue for the district in which the taxpayer files his returns and must contain a full recital of the causes for the delay." No order has as yet been issued and presumably no order will be issued granting any general extension, but the Department should certainly be quite liberal in granting extensions in view of the delay in issuing the regulations, particularly if the taxpayer files a tentative return and pays one-quarter of the estimated amount of tax.

Consolidated Returns

Consolidated returns for 1928 are to be on the same basis as for 1927.

For 1929 and subsequent years consolidated returns are the subject of quite different provisions. Common ownership of stock by one or more individuals is not after January 1, 1929 a basis for a consolidated return. There must be a parent reporting corporation, of which the others are subsidiaries. While this provision does not apply to tax returns for 1928, it must be a matter of present concern to some corporations, or else they will find at the end of the year that they have lost the right to file consolidated returns.

The law also makes special provision that such consolidated returns for 1929 and subsequently shall be settled in accord with regulations in effect at the time the returns are filed, and the filing of such consolidated returns shall be the taxpayers' consent to such regulations. The new Regulations 75 recently issued is quite a remarkable document. It is in many particulars a radical departure

from established precedents. Personally I believe these regulations are so unsound in many particulars that they will have to be largely rewritten. In some points it seems to me the Treasury has so far exceeded its authority that its regulations will be void. In others I think when the Treasury realizes the practical consequences of some of the provisions it will itself insist on their revision. I think they call for an impossible administrative scheme which will fall of its own weight.

Consolidated Net Income

The new Regulations 75 restate the basis for computation of consolidated net income. The former provision of Article 635 of Regulations 69 was that—

"Subject to the provisions covering the determination of taxable net income of separate corporations, and subject further to the elimination of intercompany transactions (whether or not resulting in any profit or loss to the separate corporations), the consolidated taxable net income shall be the combined net income of the several corporations consolidated."

Article 31 (a) of Regulation 75 provides—

"Except as otherwise provided in these regulations, the consolidated net income of an affiliated group, which makes or is required to make a consolidated return for any taxable year, shall be the aggregate of the gross income of each of the members of such group less the aggregate of the allowable deductions of each of such members, except that gain or loss will not be recognized upon transactions between members of the group (referred to in these regulations as 'inter company transactions')."

Presumably the change from the provision for "the elimination of intercompany transactions" to the provision that "gain or loss will not be recognized upon transactions between members of the group", is going to be found important in some cases or the change would not have been made. Probably the introduction of the words "Except as otherwise provided in these regulations" is an even more important change. Only by a careful consideration of a large number of other provisions is it possible to tell how far the regulations are intended to depart from the prior doctrine that all intercompany transactions were to be eliminated in determining consolidated net income.

The regulations may be unsound and subject to material revision; nevertheless, it does behoove any taxpayer to consider most carefully these regulations before he engages in any intercompany transactions in 1929.

New Regulations Not "Approved" By Experts

As to these Regulations 75, it sounds well to say, as the Secretary of the Treasury does say, that the Committee charged with drafting these regulations "held hearings and various organizations of taxpayers and the public generally were invited to present their views and proposals. The regulations promulgated today represent the judgment of the committee formed after the hearings, after months of study, and after consultation with many of the recognized experts and students of the problems" (See Internal Revenue News, February 1929, p. 17).

You will note that this does not state that these regulations are approved by these "recognized experts and students of the problems." This reminds us of the story of the man who had agreed with his wife that his decision was to control as to all major questions and hers as to the minor ones, only to find that no major questions ever arose. Or the other story of the man who always compromised all disputes with his wife but he slept on the doorstep.

The Secretary further states "It was obvious, however, that the regulations must conform as closely as possible to the policies already adopted by the Congress and applicable to the determination of tax liabilities of separate corporations and corporate stock-holders, preserving the sound purposes for which the privilege of filing consolidated returns is properly granted and safeguarding against improper advantages and the evasion or avoidance of tax liabilities."

Year after year the regulations have contained the statement, substantially as made in Article 631 of Regulations 69, that

> "Consolidated returns are based upon the principle of levying the tax according to the true net income of a single enterprise, even though the business is operated through more than one corporation. Where one corporation owns the capital stock of another corporation or other corporations, or where the stock of two or more corporations is owned by the same interests, a situation results which is closely analogous to that of a business maintaining one or more branch establishments. In the latter case, because of the direct ownership of the property, the net income of the branch forms a part of the net income of the entire organization."

This has been the public pronouncement by the Department as to the principle upon which consolidated returns were based. This pronouncement has been before Congress at the time every Revenue Act since that of 1918 was passed and there has never been a single change made in the law to indicate that Congress did not subscribe to this as the correct principle for consolidated returns. This principle is still followed as to 1928 returns. It would seem that "The policies already adopted by Congress" as to consolidated returns represented simply the fullest possible endorsement of the principle enunciated in former regulations. It does not seem at all obvious how there was anything in Congressional action which called for such radical changes as have been embraced in the new Regulations 75.

The Secretary's statement also refers to "the necessity for certainty in the rules to be applied to the more important or more common transactions." It is hard to see where radical departures from prior regulations and from the decisions which the courts have given to them and to the law will give the desired certainty. It rather seems that the new regulations will open the door for many new questions and contests so that only after many more years of litigation will we have any certainty as to these points.

However, 1928 returns are to be filed on the same basis and under substantially the same Treasury regulations as those applicable to 1927 and prior years. The advance copy of Regulations 74 which I have before me in the Prentice-Hall Service still contains this provision as to 1928 returns that the consolidated net income is to be determined subject "to the elimination of intercompany transactions (whether or not resulting in any profit or loss to the separate corporations)."

Subsidiaries in "Contiguous" Countries

An interesting provision of limited application is that for 1929 and future years (but not for 1928) a wholly owned subsidiary organized under the laws of contiguous countries solely for the purpose of complying with the laws of such country as to title and operation of property may be included in a consolidated return. It is intended in this way to allow in a consolidated return deductions for depletion and depreciation even though the actual ownership of such property stood in a foreign corporation.

Changes in Administrative Provisions

Probably the most numerous and extensive changes are those relating to administrative provisions.

The administrative procedure is at best so involved and complicated that it is exceedingly difficult briefly to discuss the meaning of these various changes. The majority of taxpayers will probably continue in the future, as in the past, largely on a basis of hoping for the best. They are more concerned with getting their tax liabilities settled at some reasonable kind of figure than with fighting over a lot of technicalities. Occasionally they find by some bitter experience how deeply they are concerned in these administrative questions.

It is undoubtedly true that the reduction of tax rates, and particularly the fairly uniform rate as to corporations, has made a great improvement in the situation. Neither the taxpayer nor the Government is greatly concerned about questions as to whether an amount is to be taxed as the income of one year or of another. For this reason we do have our income tax administration

running much more smoothly than it formerly did. If inventories are reasonably stated they probably will be accepted by the Department, or if the Department does insist on some inventory change the taxpayer probably need not dispute it.

Another reason the tax administration has been running more smoothly is that so many questions have already been considered and determined. We do not longer need the prolonged conflicts as to bases for depreciation, depletion and inventories such as we had in prior years. The general bases as already established can generally be followed from year to year. There may have to be some new determination because of the transfer of properties; because we start cutting timber from a property for which a depletion rate has never been established, or for some other special reason. We may have such a radical change in the nature of the business as would call for a different inventory basis from that which we have previously used. These special cases will arise, but I think the general sentiment of the taxpayers is that where matters have been heretofore decided in some way which is reasonably satisfactory, it is much better to continue them unchanged rather than to bring them up as questions of renewed conflict.

It is perfectly true that the best we can say about a lot of decisions is that they are reasonably fair and are approximately right. That is all we can ever say as to any decisions which are based on judgment and opinion. None of us are wise enough to decide exactly the right amount to be charged in any year for depreciation or for depletion. When buildings or equipment are abandoned or disposed of, we can state the total depreciation applicable to their life and we can state exactly what have been the years of their life, but we still cannot decide an exact amount which, during each year of such life, should have been written off as the depreciation correctly applicable to that particular year. Similarly, when we have cut over timberland and have sold the remaining land we can tell the total cost to be written off as depletion against the total lumber cut. But even this still leaves to us a more or less arbitrary determination as to the right depletion applicable to each kind and class of timber removed. The best we can hope for is to get some fair and reasonable amount deductible from each year's operations. Accordingly, where we have reached what we can consider a fairly reasonable basis, I am not at all inclined lightly to disturb it. This is true even though the amount of such allowance be much less than the ordinary business man would feel that he should write off in the prudent conduct of his affairs.

Suggested "Uniform" Depreciation Rates

Recently there has been a movement within the Department to try to get uniform rates of depreciation agreed upon as applicable to the various industries. At one time a most exhaustive study was proposed with a questionnaire which would have called for a most detailed classification and study of all machinery installations and replacements over a period, if I correctly remember it, of some twenty years. Naturally those who received such questionnaires were appalled at them and this proposal was withdrawn. Since then there have been repeated suggestions that in some way or other various trade associations might cooperate with the Department to furnish the statistics and other information; which would establish what were fair general rates in the industry. There has also been manifested a desire to get statements of the amounts spent for repairs, so that if possible one uniform rate might be determined upon, which would cover both depreciation and repairs.

As to some few industries, I believe trade associations have come to certain agreements with the Department as to fair general rates, but it is my impression in most cases where this has been done it was done some years ago when the important returns had not yet been audited. Many of us I think would have been much disposed to do this before we had gone through the lengthy discussions which we have had each to establish the rate which would be fair in his individual case.

Admittedly the various taxpayers in their individual discussions with the Department have not arrived at rates which will be at all uniform within any particular industry. It is not surprising that this should have happened, because we have to consider not merely the personality of those, who in each case presented the matter before the Department, but we also have to recognize that there are actual differences in the physical situation of the various plants. We cannot say that simply because two plants are engaged in the production of paper we will have the same actual depreciation on the modern, up-to-date plant that we have on the old plant which has come down from a former generation. Wherefore, we may perhaps come as close to a fair determination of depreciation applicable to each of the plants within our industry by taking the determination, which has been separately made for each of them, as we would by letting each apply to itself the average rate, which might be agreed upon for the entire industry.

Present Practice Preferable

But this, after all, is a minor consideration in my mind, I come back to the fact that I, as a taxpayer, would be much more disposed to continue that which I consider as a reasonably satisfactory rate heretofore established, than I would to throw the entire question again up for discussion and dispute in the hope that I might thereby get a somewhat more favorable allowance for myself. Even if I were a taxpayer, who found that for one reason or another I had not obtained a depreciation or depletion allowance equal to that which I found others similarly circumstanced in my industry had obtained, I would still be much more inclined to ask for a reconsideration of my own case with opportunity to present anew the facts, which I felt should be considered, as to the allowance to which I was entitled, than I would be to start a general agitation.

Suggests Conference on Rules

I do believe we can have a better statement of the principles according to which depreciation should be determined. I should like to see some general conference with the Department in an attempt to draw up a better set of general rules, but I would include as one of such rules, a provision that no taxpayer's basis as heretofore determined should be changed, unless it were definitely shown either by the taxpayer, on the one hand, or by the Department, on the other, that the allowance granted to him had not been in accord with sound depreciation principles. I firmly believe, that it is more to the interest of the Government, as well as to the interest of the taxpayer, that bases heretofore adopted should be followed, except when they are clearly proven to be wrong, than it is to be continually reopening these questions with the strong probability that the later decision will be no more right than was the earlier one.

Changes Not Made Important

A change which the 1928 Act did *not* make is probably of even greater importance than those which it made. The 1918 Act had put in a definite limitation of five years from the date the return was filed in which the tax might be assessed or collected. The 1921 Act made this four years for assessment but continued the five years for collection. In both cases there was the exception if a suit or proceeding for the collection of the tax had been begun before the expiration of the five years. The 1924 Act continued the four-year period for 1924 and subsequent years as well as continuing the four and five-year respective periods for prior years, but it introduced the new provision, that if any tax was assessed within the period prescribed by the law it might be collected by distraint or by a proceeding in court begun within six years after its assessment. Then the 1926 Act, without changing the period for prior years, brought in a three-year limitation for taxes imposed by it, and continued the six-year period for collection in court or by distraint. To resolve any question as to the effect of the running of the statute of limitations it introduced the Section 1106 (a) which provided that "The bar of

the statute of limitations* * * * *shall not only operate to bar the remedy but shall extinguish the liability."

The Treasury had made some rather liberal interpretations as to how, in spite of the running of the statute of limitations, it could proceed to collect the tax. Apparently relying on these liberal interpretations in its own favor it had allowed many taxes to remain uncollected until after the legal periods had run and in many cases had collected these amounts. After extended litigation, decisions were given in general to the effect that the law means what it says and that the limitations were effective and that Section 1106 (a), from the time it was enacted, did extinguish the liability. Many assessments booked had to be cancelled and many amounts collected had to be refunded; also the validity of many waivers was thrown in question. The Treasury Department being definitely faced with these conditions, a serious attempt was made to cure them by a series of retroactive amendments in the 1928 Act. Section 1106 (a) was to be repealed as of the date of its enactment. Where claims in abatement had been filed taxes were to be collectible regardless of the statute of limitations. A suspension of the running of the statute of limitations as to one member of a consolidation was to be a suspension as to all. Without going into details it is sufficient to say, that if the bill had been enacted carrying all these recommended provisions towards breaking down the taxpayer's rights under the several statutes of limitations, the Treasury would have felt itself warranted in going to almost any limit to collect taxes which it decided should have been paid. It would have been almost equivalent to serving notice on the country that Congress would support the Treasury in a general disregard of any statute of limitations which might be imposed by law.

Senate Upheld Statute of Limitations

Fortunately the Senate set its face resolutely against any such general breaking down of the Government's pledged word as to the statute of limitations. It did make certain concessions to the Department. It did allow the Treasury to retain moneys which had been paid to it after the statute of limitations had run in cases where collection had been stayed by the filing of a claim for abatement. It did make a suspension of the running of the statute of limitations against one member of an affiliated group apply likewise to others. On the other hand, it very definitely provided for the return of moneys which had been collected after the statute of limitations had run provided only that timely claim for their refund had been filed. I cannot here discuss at length all the changes which Congress did make as to the collection and refund of tax payments, but after all these are less important than the fact that by its refusal to accede to many of the proposed amendments it definitely took a position that the statute of limitations should be respected and that overpayments by the taxpayer should be refunded.

The courts have also been giving some recent decisions quite favorable to the taxpayers and the Department itself has issued Mim. 3660 (IRB VII-32 p. 4,) G. C. M. 4197 (IRB VII-34 p. 3), G.C.M. 2757 (IRB VII-34 p. 8) and other decisions which do recognize taxpayer's rights.

March 1st, 1913, Surpluses

Another negative feature of importance was the defeat of the attempt to eliminate the right to distribute, tax-exempt to the stockholders, a surplus accumulated prior to March 1, 1913. The excuse given for its elimination was that if corporations had not in all the years since 1913 taken the opportunity to make such tax-exempt distributions, they and their stockholders had forfeited any right to further consideration. Whoever was author of this explanation had evidently forgotten that Congress had spent much effort to draw this provision so as to prevent any non-taxable distributions so long as the corporation had on hand earnings accumulated since *March 1, 1913;* and that if corporations had not more generally distributed their 1913 surpluses it was only because the Government had prevented their attempt to do so. When these facts were pointed out to Congress it re-enacted the prior provisions for such non-taxable distributions and again went on record as to its intention that surplus accumulated, or increase in value of property accrued, prior to March 1, 1913 *should not constitute taxable income when distributed to stockholders.*

Dividends and Their Taxable Status

I might here note that the Department now seems to have developed a fairly satisfactory procedure for determining the taxable status of distributions to stockholders. There had been the difficulty that the taxable status of these distributions had to be determined from the corporation's accounts, whereas the stockholder was the taxpayer concerned. It was easily argued that the stockholder could not step in to the Department's audit of the corporation's accounts nor could the corporation step in to the audit of the stockholder's accounts. This technicality seems finally to have been brushed aside and a practical procedure adopted. The Department will now take up with the corporation, or its authorized representatives, the matter of a determination of the nature of its distributions, particularly as to an agreement upon the figures involved, in order to arrive at a basis which the Department will apply to all its stockholders' accounts. The corporation will not have the right to go before the courts to dispute the Government's basis, but it will be advised of what that basis is, and can thus give to its stockholders the information upon which they can make their own appeals or bring their own suits in court. Needless to say, the corporation cannot foreclose its stockholders from any such rights which they may have. Except in certain test cases, there seems little probability that individual stockholders will care to dispute a determination which the corporation can say it considers to be fair and reasonable.

Losses Since March 1st, 1913

In general, the Department's present rulings for such computations seem fair. I think the Department is wrong in denying full recognition to losses incurred since March 1, 1913. It admits that such losses may be applied to wipe out any prior balance of earnings accumulated since March 1, 1913. It also admits that if such losses are in excess of any previously accumulated surplus and of any March 1, 1913 appreciation in value of property, that such excess must be made good out of future earnings before there will be any accumulation of such earnings available for distribution. It holds, however (and in this I think it is wrong) that if the corporation has a balance of 1913 surplus or of 1913 appreciation then any loss which it may have in excess of its then balance of earnings accumulated since March 1, 1913 is not a loss to be made good out of future earnings. This I think will become the subject of some test suit, as will possibly some others of the Department's rulings.

Review Division Will Give "Decisions"

However, the fact stands that there is now an established authority in the Review Division, which will consider and give decisions on these matters. I am advised that it is even possible for a corporation on its own motion, to take up with this division its accounts as to taxable status of distributions and get from it determination for past years as well as for the current year. This is a very important step for stockholders of such corporations engaged in the wasting industries as are making distributions which may under the law be considered as from depletion or depreciation reserves.

Profit or Loss Computations

The provisions, for computing gain or loss, are in general the same as under the prior Act, to the effect that against the cost or other basis given for the property when acquired, proper

adjustments are to be made for any subsequent expenditure, etc. chargeable to capital account and for depreciation or depletion which have "been allowable in respect of such property under this Act or prior income tax laws." There is the same exception as formerly, as to discovery depletion and the same provision as to depletion or depreciation prior to March 1, 1913.

A new provision is written into the law to the effect that—

"In the case of stock the basis shall be diminished by the amount of distributions previously made in respect of such stock, to the extent provided under the law applicable to the year in which the distribution was made."

This simply writes into the law what the Department had previously been doing.

"Assessment" Period Two Years

The period of limitation on assessment of taxes imposed by this Act is reduced from three years to two years *after the return was filed,* with the same provision as heretofore, that this time limitation does not apply in the case of a false or fraudulent return with intent to evade the tax or in case of a failure to file the return. There is also the same provision, that if an assessment is made within the legal period, the tax may be collected by distraint or action in court within six years thereafter. An additional period for assessment or collection may be agreed to by waiver.

A new provision is that corporations, about to be dissolved may request prompt assessment of the tax in a manner similar to that, which had heretofore been allowed to decedents or their estates. By separate amendment, this provision is made applicable to the taxes under prior Acts so that a corporation, about to be dissolved, can get reasonably prompt determination of its entire income tax liabilities to date.

Interest provisions are somewhat changed but they are too complicated for brief statement. They must be read to be appreciated.

Claims for Refunds and Waivers

The time for filing claims for refund or credit of taxes paid under the present Act is reduced to two years after payment. Note that the filing of a waiver extending the time in which the Commissioner can make an assessment does not extend the time within which the taxpayer can file claim for refund.

The Board of Tax Appeals can under this Act only order a credit or refund as to a tax paid not more than two years before the filing of the petition with the Board, unless claim for refund was filed within the two-year period.

"Closing Agreements"

The provision for so-called "closing agreements" is somewhat broadened so that other officers or employees of the Department, as well as the Commissioner, may enter into closing agreements which, when approved by the Secretary of the Treasury or by the Under-Secretary, shall be final and conclusive except on a showing of fraud, etc. The Department is proceeding much more extensively to use such closing agreements; in fact, is offering them to the taxpayer in every case so that the taxpayer shall not be made to feel that his request for such closing agreements will be considered by the Department as a ground for suspicion as to his motives.

Careful Study of Act Recommended

Other points might and should be mentioned. There are many things I should like to say if time permitted. A study of the new Regulations 74 may indicate some changes of even greater importance than any of those I have mentioned. So please do not rely on this as being at all a complete statement of the changes made by the new law, the new regulations or recent decisions.

Income Tax To Continue Permanently

The Income Tax system is with us and it is going to continue, I think permanently, but at least for many years. Its provisions may be modified, its methods of administration changed, and its rates somewhat reduced or readjusted. It presents problems of financial importance to your corporations and their stockholders. These problems cannot be satisfactorily met except by a lot of time and thought and study given to the law, the regulations and the decisions. Many transactions involve tax questions which must be answered before the transactions are closed. When they are once closed they may impose tax liabilities that cannot then be avoided. There is even more need for forward-looking consideration of these tax questions than for their belated consideration when the tax return comes up for audit. So while the tax law regulations and decisions may not be particularly fascinating reading, they concern actual dollars and will well repay a real study and consideration of them. Even if one does not expect to become an authority upon them, he should at least have such a general knowledge of their provisions, or should have someone closely associated with him who has that knowledge, so that he can know when he is getting into a transaction which may involve some serious income tax questions.

COST SECTION

Deerfield Glassine to Expand

A new program of development has been announced by the Deerfield Glassine Company of Monroe Bridge, Mass. A survey of conditions in the industry has been made with a view of consolidating and utilizing past experience in the manner best calculated to meet the future market situation.

As a step in execution of the new program, Ira J. Owen, consulting industrial engineer and head of the Ira J. Owen Organization of Chicago, has become a large stockholder of the company, and has been named a member of the board of directors of the Deerfield Company, and Production Counsel of the company.

Mr. Owen says: "The Deerfield plant is ideally prepared to take care of the situation likely to develop in the future, with a demand for quality glassine papers. An abundant, year-around supply of cold and chemically pure water is indispensable to this industry. The Deerfield plant is ideally situated with reference to water, obtaining its supply from the mountain-fed Deerfield River.

"Careful and able engineering judgment is evident in the selection and arrangement of the machinery and other physical equipment of this plant.

"Past experience has established what market demands this mill is best prepared to meet advantageously—in other words, what glassine papers it is best calculated to produce. Extensive experimentation has been carried on, and officials of the company are convinced that the time has come to proceed confidently to the more extensive production of standard grades which have been determined upon with one eye to the market and the other to the physical advantages of the plant."

New Automatic Valve Control Book

The second edition of "Modern Valve Control Practice," issued by Cutler-Hammer, Inc., Milwaukee, Wis., describing the C-H Automatic Valve Control System, has just been published.

This new edition contains much additional information and data not included in the original book. Many new photographs show the use and installation of motor driven valves. These views are grouped by applications graphically demonstrating the service rendered in power plants, water works, gas plants, etc. The text supplements the illustrations.

One of the most noteworthy features as brought out in the book is the operation of all valves throughout the plant by means of push buttons from a single centralized control board.

In addition the book explains in detail the construction and the operating principle of the C-H Automatic Valve Control System including the new unit for small valves.

Considerable care has apparently gone into the making of this new book and it should prove a valuable addition to every plant engineer's library. A copy will be sent free, upon request to Cutler-Hammer, Inc., 187 12th street, Milwaukee, Wis.

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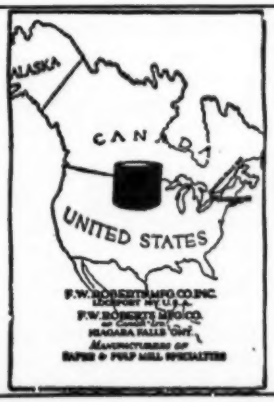

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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Richmond, Va.—The Standard Paper Manufacturing Company, Hull and Canal streets, has plans under way for extensions and improvements to cost close to $500,000, including buildings and equipment. The work will include an extension to the present No. 3 mill, and the installation of a new paper-making machine, with auxiliary equipment. It is proposed to develop large increase in present output. The program will be placed under way at an early date.

Nashville, Tenn.—The du Pont Cellophane Company, River road, Buffalo, N. Y., a subsidiary of E. I. du Pont de Nemours & Company, Wilmington, Del., manufacturer of transparent wrapping stock, is planning the early construction of a new mill at Old Hickory, near Nashville, adjoining the plant of the du Pont Rayon Company, an affiliated organization. The project will consist of a group of buildings, with machine shop, boiler house and auxiliary mechanical units, and is reported to cost more than $1,500,000, with machinery. Present mill at Buffalo will be continued in service as heretofore.

Port Orchard, Wash.—The Folwell Engineering Company, Securities Building, Seattle, Wash., is interested in a project to construct and operate a new paper and pulp mill in the vicinity of Port Orchard. The projected plant is estimated to cost about $2,000,000, and the company has negotiations under way with local business interests for approval of the enterprise, covering subscriptions to an amount of $500,000, the Folwell company to furnish a gross amount of $1,500,000. Tentative plans have been arranged for the initial mill units.

New York, N. Y.—The Lily-Tulip Corporation, recently chartered under Delaware laws with a capital of $1,000,000, and 250,000 shares of common stock, no par value, has completed its organization and is now functioning. The company has taken over the Tulip Cup Corporation, College Point, L. I., and the Public Service Cup Company, 167-41st street, Brooklyn, both manufacturing paper cups and kindred products, and will consolidate the two concerns. It is understood that both plants will be continued in service as heretofore, under the new management, and that a general expansion program will be carried out for increased production. The new corporation has disposed of a common stock issue to total $690,000, a portion of the proceeds to be used for the purpose noted. Space has been leased in the building at Lexington avenue and 41st street, New York, and headquarters will be maintained at that location. Henry Nias will be president of the consolidated organization.

Rome, Ga.—The Kerster Manufacturing Company, manufacturer of paper boxes and containers, is said to be planning the early rebuilding of portion of factory destroyed by fire, February 25, with loss estimated at close to $20,000, including equipment.

Camden, N. J.—The Sayford Paper Specialty Company, care of Edward F. Hodges, 1107 Wilson Building, Camden, recently organized by Charles M. Bridge and associates, with capital of $125,000, is said to be planning the early operation of a local plant for the manufacture of paper goods of various kinds.

Louisville, Ky.—Plans have been perfected for a consolidation of wall paper interests at Louisville, and Cincinnati, Ohio, by Bertram H. Straus, formerly vice-president of Herman Straus & Sons, Inc., Louisville, and associates. A company is being formed to acquire the Louisville Wall Paper Company, 528 West Main street, and the Cincinnati Wall Paper Company, 240 East Fifth street, Cincinnati. The new organization will maintain headquarters at Louisville, and has leased the building formerly occupied by the Louisville Wall Paper Company, and will continue at that location; extensions and improvements will be made, including installations of equipment for production of wall paper sample books, etc. It is proposed to establish a group of distributing branches in different cities. Mr. Straus will head the consolidated organization.

Van Buren, Me.—The International Paper Company, 100 East 42nd street, New York, is reported to have preliminary plans under consideration for the construction of a hydro-electric power plant on the Fish River in the vicinity of Van Buren, with initial capacity of about 20,000 hp. It is said that the unit will be used in connection with a paper mill development in this locality. A transmission line is proposed to St. Leonard, Que. It is understood that the project will mature at an early date.

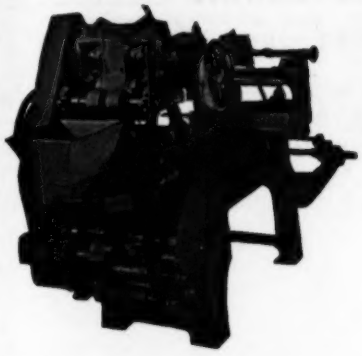
Big Island, Va.—Active construction is in progress on a hydroelectric power plant on the James River, near Snowden, about 4 miles from the mill of the Bedford Pulp and Paper Company, Big Island, Milton E. Marcuse, president. Mr. Marcuse and associates have organized the Hydro-Electric Corporation of Virginia, Inc., to carry out the development and it is understood that the Bedford mill will secure power from the new source. The plant will have a capacity of 10,000 hp. Contracts have been let to the Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., for generating units and other primary electrical equipment. The James Leffel Company, Springfield, Ohio, has the award for hydraulic equipment and gate hoists; the Newport News Dry Dock and Ship Building Company, Newport News, Va., will furnish the trash racks, rakes, etc. Awards for other equipment, including a 30-ton electric traveling crane, are expected to be made at an early date. The power plant is scheduled for completion in September.

West Springfield, Mass.—The General Fibre Box Company, West Springfield, care of Clarence J. Schoo, 22 Green Lane, Springfield, treasurer, recently organized with capital of 5,000 shares of stock, no par value, will take over and expand the local company of same name. It is understood that increased output will be arranged. Seaman E. Rossetter is one of the incorporators of the new company.

Chester, Pa.—The Scott Paper Company, manufacturer of tissue papers, etc., has preliminary plans under way for construction of a new one-story power plant at its local mill, and it is understood that bids will be asked on general contract in the near future. Estimated cost has not been announced. C. M. Howell, Chester, Pa., is engineer.

Montreal, Que.—The International Power & Paper Company, a subsidiary of the International Paper Company, New York, has been making awards for equipment for mills and power

(Continued on page 74)



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Paper hangings .....53 bls., 29 cs.
News print .....1,431 rolls
Printing paper .....42 rolls, 44 cs.
Decalcomania paper .....60 cs.
Drawing paper .....56 cs.
Filter paper .....9 cs.
Parchment paper .....43 bls.
Transparent greaseproof paper .....38 cs.
Colored paper .....86 cs.
Wrapping paper .....86 cs.
Packing paper .....69 bls.
Photo paper .....2 cs.
Surface coated paper .....67 cs.
Gold coated paper .....6 cs.
Metal coated paper .....5 cs.
Tissue paper .....10 cs.
Writing paper .....9 cs.
Envelopes .....29 cs.
Stencil paper and ink.....83 cs.
Straw board .....31 rolls
Miscellaneous paper....303 rolls, 19 bls., 234 cs.

CIGARETTE PAPER

British American Tobacco Co., Aquitania, Southampton, 117 cs.

WALL PAPER

F. J. Emmerich, A. Ballin, Hamburg, 24 bls.
Globe Shipping Co., A. Ballin, Hamburg, 23 bls., 1 cs.
Bendix Paper Co., A. Ballin, Hamburg, 2 cs.
S. Stern Stiner & Co., A. Ballin, Hamburg, 1 cs.
National City Bank, A. Ballin, Hamburg, 7 bls.
American Exchange Irving Trust Co., A. Ballin, Hamburg, 44 cs.
J. E. Bernard & Co., A. Ballin, Hamburg, 4 bls.
Globe Shipping Co., A. Ballin, Hamburg, 12 bls.
F. A. Binder, Stuttgart, Bremen, 20 bls.
F. J. Emmerich, Cedric, Liverpool, 9 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 39 bls., 3 cs.
A. C. Dodman, Jr., Inc., Cedric, Liverpool, 12 cs., 14 bls.
A. C. Dodman, Jr., Inc., Andania, Liverpool, 11 cs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 3 cs.

NEWS PRINT

Journal of Commerce, Odensholm, Kotka, 66 rolls.
Parsons & Whittemore, Inc., A. Ballin, Hamburg, 1,008 rolls.
Hudson Trading Co., Ragnhilhsholm, Gothenburg, 357 rolls.

PRINTING PAPER

Keuffel & Esser Co., A. Ballin, Hamburg, 42 rolls.
Martin & Bechtold, Stuttgart, Bremen, 11 cs.
P. C. Zuhlke, Pennland, Antwerp, 25 cs.
C. Steiner, Vechtdyk, Rotterdam, 8 cs.

DECALCOMANIA PAPER

C. W. Sellers, A. Ballin, Hamburg, 11 cs.
Phoenix Shipping Co., A. Ballin, Hamburg, 2 cs.
B. F. Drakenfeld & Co., Cedric, Liverpool, 10 cs.
B. F. Drakenfeld & Co., Cedric, Liverpool, 37 cs. (duplex).

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PACKING PAPER

Steiner Paper Corp., Bergensfjord, Oslo, 69 bls.

PHOTO PAPER

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SURFACE COATED PAPER

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Globe Shipping Co., A. Ballin, Hamburg, 26 cs.
P. C. Zuhlke, Pennland, Antwerp, 38 cs.

GOLD COATED PAPER

F. Murray Hill Co., Stuttgart, Bremen, 6 cs.

METAL COATED PAPER

Hensel, Bruckman & Lorbacher, Stuttgart, Bremen, 5 cs.

TISSUE PAPER

F. B. Vandegrift & Co., Andania, Liverpool, 10 cs.

WRITING PAPER

Distinctive Writing Paper Co., Ile de France, Havre, 8 cs.
Guibout Freres, Ile de France, Havre, 1 cs.

ENVELOPES

Globe Shipping Co., Stuttgart, Bremen, 29 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., A. Ballin, Hamburg, 83 cs.

STRAW BOARD

Perkins, Goodwin & Co., Vechtdyk, Rotterdam, 31 rolls.

MISCELLANEOUS PAPER

H. Reeve Angel & Co., Inc., Odensholm, Helsingfors, 1 cs.
P. H. Petry & Co., A. Ballin, Hamburg, 11 cs.
Phoenix Shipping Co., A. Ballin, Hamburg, 2 cs.
Hensel, Bruckman & Lorbacher, Stuttgart, Bremen, 2 cs.
Keller Dorian Paper Co., Ile de France, Havre, 38 cs.
P. J. Schweitzer, Ile de France, Havre, 18 cs.
Quality Art Novelty Co., Ile de France, Havre, 2 cs.
Japan Paper Co., Ile de France, Havre, 34 cs.
Standard Products Corp., Ile de France, Havre, 114 cs.
Japan Paper Co., Conte Biancamano, Genoa, 12 cs.
B. Ullman Co., Sagoporack, Gothenburg, 19 bls., 38 rolls.
Arkell Safety Bag Co., Sagoporack, Gothenburg, 265 rolls.

RAGS, BAGGINGS, ETC.

Katzenstein & Keene, Inc., C. Pioneer, Buenos Aires, 42 bls. paper stock.
American Express Co., Alaunia, Southampton, 16 bls. rags.
Chase National Bank, Hagen, Hamburg, 680 bls. rags.
Chase National Bank, Hagen, Hamburg, 107 bls. flax ends.
Amtorg Trading Corp., Hagen, Hamburg, 521 bls. rags.
Amtorg Trading Co., Hagen, Hamburg, 18 bls. flax waste.
Equitable Trust Co., Hagen, Hamburg, 28 bls. rags.
E. J. Keller Co., Inc., Minnetonka, ——, 10 bls. rags.
National City Bank, Minnetonka, London, 14 bls. rags.
Jaffe Products Co., Sud Argentino, Buenos Aires, 38 bls. rags.
P. Garvan, Inc., Sud Argentino, Buenos Aires, 72 bls. rags.
Guaranty Trust Co., Exchester, Leghorn, 167 bls. rags.
V. Galaup, Exchester, Leghorn, 106 bls. cotton waste.
V. Galaup, Exchester, Naples, 28 bls. rags.
E. J. Keller Co., Inc., Exchester, ——, 102 bls. rags.
The Barret Co., Stuttgart, Bremen, 127 bls. rags.
J. A. Manning Paper Co., Stuttgart, Bremen, 10 bls. rags.
B. D. Kaplan, West Arrow, Antwerp, 9 bls. rags.
Castle & Overton, Inc., West Arrow, Antwerp, 54 bls. bagging.
Castle & Overton, Inc., West Arrow, Antwerp, 120 bls. flax waste.
W. Steck & Co., West Arrow, Antwerp, 77 bls. rags.
State St. Trust Co., West Arrow, Antwerp, 103 bls. flax waste.
Royal Manfg. Co., West Arrow, Antwerp, 60 bls. cotton waste.
Union Bank & Trust Co., Hinnoy, Barcelona, 371 bls. rags.
Chase National Bank, Kepwick Hall, Alexandria, 160 bls. rags.
Interstate Trust Co., Kepwick Hall, Alexandria, 100 bls. rags.
E. J. Keller Co., Inc., Kepwick Hall, ——, 150 bls. rags.
J. Cohen Sons, Andania, Liverpool, 45 bls. rags.
M. Snedeker Corp., Andania, Liverpool, 53 bls. thread waste.
Darmstadt, Scott & Courtney, Vechtdyk, Rotterdam, 20 bls. rags.
Castle & Overton, Inc., Vechtdyk, Rotterdam, 7 bls. waste.
Castle & Overton, Inc., Exbrook, Spain, 77 bls. cattle hair.
Bank of The Manhattan Co., Exbrook, Barcelona, 134 bls. rags.
1st National Bank of Boston, Exbrook, Barcelona, 92 bls. picker waste.
Castle & Overton, Inc., Virginian, San Francisco, 36 bls. rags.
Castle & Overton, Inc., Cabo Santa Maria, Spain, 65 bls. rags.

OLD ROPE

Brown Bros. & Co., Minnetonka, London, 54 coils.
Jaffe Products Co., Sud Argentino, Buenos Aires, 35 bls.
International Purchasing Co., Exchester, Genoa, 179 coils.

CASEIN

T. M. Duche & Sons, Sardinian Prince, Buenos Aires, 1,084 bags, 65,040 kilos.
Chemical National Bank, Canadian Pioneer, Buenos Aires, 1,250 bags, 75,000 kilos.
Champion Coated Paper Co., Sud Argentino, Buenos Aires, 1,213 bags, 57,389 kilos.
Champion Coated Paper Co., Southern Cross, Buenos Aires, 3,079 bags.
Kalbfleisch Corp., Southern Cross, Buenos Aires, 1,585 bags.

WOOD PULP

Atterbury Bros., Inc., United States, Oslo, 500 bls. wood pulp, 100 tons.
Castle & Overton, Inc., Hagen, Hamburg, 1,813 bls. wood pulp, 271 tons.
Hudson Trading Co., Minna, Liverpool, N. S., 14,000 bls. wood pulp, 1,421 tons.
Atterbury Bros., Inc., Bergensfjord, Oslo, 1,000 bls. wood pulp.
E. J. Keller Co., Inc., Bergensfjord, ——, 400 bls. wood pulp.
Irving Trust Co., Norefjord, Oslo, 500 bls. sulphite.
E. M. Sergeant & Co., Norefjord, Oslo, 160 bls. wood pulp.
Chemical National Bank, Norefjord, Oslo, 180 bls. sulphite.
J. Andersen & Co., Norefjord, Oslo, 2,160 bls. sulphite.
O. E. Kiaer, Norefjord, Oslo, 750 bls. sulphite.
The Borregaard Co., Inc., Sagoporack, Gothenburg, 150 bls. wood pulp, 25 tons.
J. Andersen & Co., Sagoporack, Sarpsborg, 1,350 bls. sulphite, 225 tons.
M. Gottesman & Co., Inc., Ragnhildsholm, Gothenburg, 250 bls. sulphite.
Price & Pierce, Ltd., Ragnhildsholm, Gothenburg, 375 bls. wood pulp.
Bulkley, Dunton & Co., Ragnhildsholm, ——, 1,975 bls. wood pulp.
M. Gottesman & Co., Inc., Tergestea, Sebenico, 330 bls. wood pulp.

WOOD FLOUR

B. L. Soberski, Norefjord, Frederickstad, 3,600 bags.
Corn Exchange Bank, Norefjord, Flekkefjord, 500 bags.
H. J. Baker & Bros., Ryndam, Rotterdam, 1,300 bags.

WOOD PULP BOARDS

Lagerloef Trading Co., Hagen, Hamburg, 125 bls., 26 tons.

PORTLAND IMPORTS

WEEK ENDING MARCH 2, 1929

M. Gottesman & Co., Inc., Odensholm, Sweden, 600 bls. sulphite.
Waterfalls Papermills, Sagoporack, Gothenburg, 195 rolls paper.
Waterfalls Papermills, Sagoporack, Gothenburg, 5,000 bls. wood pulp, 1,014 tons.
The Borregaard Co., Inc., Sagoporack, Gothenburg, 1,750 bls. wood pulp, 355 tons.
The Borregaard Co., Inc., Sagoporack, Hurum, 1,392 bls. sulphate, 232 tons.
The Borregaard Co., Inc., Sagoporack, Bamble, 1,372 bls. sulphate, 228 tons.

(Continued on page 72)

Get more business from Delicatessen Stores

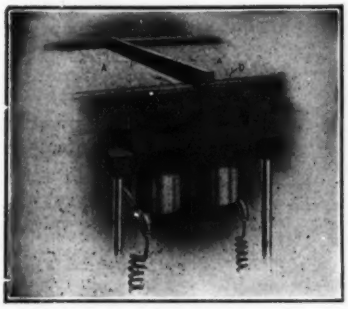
PAPRUS DISHES will help you. They hold their shape like wood—yet sell for less than paper. Waterproof—no folds—no staples. Moulded in one piece from pulp. White—sanitary—attractive! More and more dealers are using them. Write for price list.

PAPRUS
DISHES

KEYES FIBRE COMPANY, INC.
General Sales Offices: GRAYBAR BLDG., NEW YORK
Factory: Waterville, Me. JOHN M. HART COMPANY, INC., *Manager of Sales*

INSULATING PAPERS

Are you making paper for insulating purposes? If so, our *Type B Iron Extractors* are a necessary part of your equipment.



Hundreds of these extractors are in use in the United States, Canada, and Europe. Write us for Bulletins and full data.

THE ROLAND T. OAKES CO.
Electrical Specialists **Holyoke, Mass.** *Established 1885*

SHIPPING INSURANCE

The Use of

ELIXMAN CORES

protects your rolls and insures their delivery to your customer in perfect condition. They eliminate claims for damages.

SHIPPING INSURANCE

Your two sources of supply are

Canadian Elixman Company
HAMILTON, ONTARIO

Elixman Paper Core Company
CORINTH, N. Y.

One Way to lower power costs

Old-fashioned methods of power transmission may be creating big power bills—analyze your power drives carefully and make sure that each drive exactly meets the requirements. Morse Silent Chain Drives have reduced power costs in many plants by eliminating unnecessary power losses and maintaining an efficiency of 98.6%.

One tenth or 5,000 H. P., the same dependable results are possible. A Morse Transmission Engineer will be glad to help in designing your power drives for best results.

MORSE CHAIN CO.
ITHACA, N. Y.

Branches in Principal Cities

3270

MORSE SILENT CHAIN DRIVES

Imports of Paper and Paper Stock

(*Continued from page 70*)

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 2, 1929

Darmstadt, Scott & Courtney, Tak. Maru, Osaka, 60 bls. rags.

Castle & Overton, Inc., Tak. Maru, Osaka, 50 bls. rags.

V. Galaup, Exchester, Naples, 45 bls. rags.

National City Bank, Exchester, Naples, 145 bls. rags.

Brown Bros. & Co., Norefjord, Oslo, 400 bls. sulphite.

Farmers Loan & Trust Co., Norefjord, Oslo, 600 bls. sulphite.

Irving Trust Co., Norefjord, Oslo, 200 bls. wood pulp.

J. Andersen & Co., Norefjord, Vestfossen, 500 bls. sulphite.

Atterbury Bros. & Co., Norefjord, Oslo, 500 bls. wood pulp.

Chemical National Bank, Norefjord, Tofte, 3,600 bls. sulphite.

Bank of New York, Exbrook, Barcelona, 197 bls. rags.

E. J. Keller & Co., Inc., Exbrook, ——, 342 bls. rags.

The Borregaard Co., Inc., Sagoporack, Hurum, 1,008 bls. sulphite, 168 tons.

Banco Com'l Italiane Trust Co., Carnia, Naples, 144 bls. rags.

Castle & Overton, Inc., Crefeld, Germany, 160 bls. peat moss.

Castle & Overton, Inc., Excellency, France, 97 bls. rags.

Castle & Overton, Inc., City of Alton, Rotterdam, 38 bls. rags.

Castle & Overton, Inc., Fatsuna Maru, Japan, 187 bls. rags.

Castle & Overton, Inc., ——, Germany, 4,034 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MARCH 2, 1929

Parsons & Whittemore, Inc., Odensholm, Sweden, 240 bls. sulphite.

J. Andersen & Co., Odensholm, Sweden, 300 bls. sulphite.

O. E. Kiaer, Odensholm, Sweden, 450 bls. wood pulp.

The Borregaard Co., Sagoporack, Gothenburg, 725 bls. wood pulp, 151 tons.

J. Andersen & Co., Sagoporack, Gothenburg, 500 bls. sulphite, 100 tons.

Pagel, Horton & Co., Inc., Sagoporack, Gothenburg, 595 bls. sulphite, 100 tons.

J. Andersen & Co., Inc., Sagoporack, Sarpsborg, 5,748 bls. sulphite, 958 tons.

The Borregaard Co., Inc., Sagoporack, Bamble, 1,028 bls. sulphate, 171 tons.

1st National Bank of Boston, Ragnhildsholm, Gothenburg, 7 bls. rags.

G. W. Millar & Co., Inc., Ragnhildsholm, Gothenburg, 68 rolls wrapping paper.

Price & Pierce, Ltd., Ragnhildsholm, Gothenburg, 500 bls. wood pulp.

Scandinavian Pulp Agency, Inc., Ragnhildsholm, Gothenburg, 3,750 bls. sulphate pulp.

Scandinavian Pulp Agency, Inc., Ragnhildsholm, Gothenburg, 1,651 bls. sulphite.

Scandinavian Pulp Agency, Inc., Ragnhildsholm, Gothenburg, 7,620 bls. kraft pulp.

J. Andersen & Co., Ragnhildsholm, Gothenburg, 1,550 bls. sulphite.

Perkins, Goodwin & Co., Ragnhildsholm, Gothenburg, 254 bls. sulphite.

Parsons & Whittemore, Inc., Ragnhildsholm, Gothenburg, 600 bls. wood pulp.

J. Andersen & Co., Tergestea, Trieste, 1,050 bls. wood pulp.

M. Gottesman & Co., Inc., Tergestea, Sebenico, 3,200 bls. wood pulp.

Castle & Overton, Inc., Pipestone County, France, 26 bls. rags.

Castle & Overton, Inc., Natirar, Germany, 98 bls. rags.

BALTIMORE IMPORTS

WEEK ENDING MARCH 2, 1929

Congoleum Nairn Co., West Arrow, Antwerp, 206 bls. bagging.

Congoleum Nairn Co., West Arrow, Antwerp, 658 bls. rags.

Baltimore Trust Co., West Arrow, Antwerp, 31 bls. rags.

Pagel, Horton & Co., Inc., Sagoporack, Gothenburg, 150 bls. wood pulp, 25 tons.

Baxter Paper Co., Sagoporack, Gothenburg, 117 rolls, 13 bls. paper.

E. J. Keller Co., Inc., Burgerdyk, ——, 600 bls. wood pulp.

Castle & Overton, Inc., City of Alton, Holland, 370 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING MARCH 2, 1929

Darmstadt, Scott & Courtney, West Arrow, Antwerp, 70 bls. bagging.

Darmstadt, Scott & Courtney, West Arrow, Antwerp, 412 bls. rags.

E. Butterworth & Co., Inc., West Arrow, Antwerp, 307 bls. rags.

Bank of New York, West Arrow, Antwerp, 321 bls. rags.

British American Tobacco Co., West Arrow, Antwerp, 40 cs. printed cigarette wrappers.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 2, 1929

British American Tobacco Co., West Arrow, Antwerp, 14 rolls wrapping paper.

Envelope Manufacturers Meet

The winter meeting of the Bureau of Envelope Manufacturers of America brought forth the usual large attendance on February 7 and 8 at the Stevens, Chicago. The industry was well represented by envelope manufacturers from both East and West. The membership was increased by two when Robert C. Schutz, Jr., of the Baltimore Envelope Company and Granville Rice of the Consumers Paper and Supply Company were admitted to the Bureau.

A radical change in the membership policy of the Bureau will take place if a proposed amendment to the constitution is approved at the fall meeting in November, 1929, when it will be brought up for consideration. This amendment would modify the requirements for membership to provide that "Any corporation, firm or individual, the major part of whose business is the manufacture or sale of envelopes or kindred products in the United States, is eligible to membership." Heretofore, membership has been restricted to companies actually engaged in the manufacture of envelopes.

The great loss suffered by the envelope and paper industry in the death of Raymond D. Bertschy, January 8, 1929, was reflected in the formal resolution expressing the grief of his friends and fellow members of the Bureau.

F. W. Randolph, secretary-treasurer of the Heco Envelope Company of Chicago, made a valuable contribution to the program in the form of an able paper on the subject of "Composite Balance Sheets and Profit and Loss Statements." Mr. Randolph drew on his many years of experience with the United Typothetae of America to show how the individual manufacturer can weigh the results of his own operations by comparing the significant operating ratios disclosed in his own financial statement with composite ratios reflecting the results of numerous companies doing a similar volume and type of business.

Thursday afternoon was largely devoted to discussion of the national advertising campaign now being sponsored by the Bureau. George D. Gaw, Chairman of the Advertising and Publicity Committee, reported in detail on the progress of the campaign to date. A booklet, called the "Plan Book," describing all the details of the campaign and showing proofs of the advertisements to be used throughout the year, is being mailed to members, advertising agencies and publications as well as to manufacturers of paper and others who are interested in the success of the campaign. Many inquiries were reported coming into the office of the Bureau as a result of the initial advertisement published in January and many requests have been received for permission to reprint the illustrations and copy used in the advertisements.

The new slogan "Good Envelopes are Just Good Business" will be used by the members in their own advertising and will be embodied in the Bureau emblem.

Whether the envelope industry as a whole would be benefited by a Trade Practice Conference under the auspices of the Federal Trade Commission was the question considered throughout the day on Friday. A tentative code of trade practice rules or resolutions, such as might properly be submitted to the Commission at a Trade Practice Conference, were given detailed consideration. Steps will now be taken to determine whether it will be practicable to call a conference for consideration of this code.

As an added feature to the well planned program, Homer J. Buckley, president of the National Council of Business Mail Users, told those present what the National Council hopes to accomplish by continuing the activities of this organization. The proposed enforcement by the Post Office Department of the ruling requiring users of third class bulk mailing privileges to sort their mailings by cities, towns and states before delivery to post offices, was deplored by Mr. Buckley, who urged those present to write to R. S. Regar, Third Assistant Post Master General, stating that the enforcement of this ruling would tend to eliminate the savings from the bulk rate of postage. Another movement sponsored by the Council will be the condensation and simplification of the existing postal regulations.

The next meeting of the Bureau will be featured by the annual golf tournament and will probably be held at Hot Springs, Va., late in May, subject to further arrangements to be carried out by the executive committee.

The

ST. REGIS PAPER COMPANY

Daily Capacity
525 TONS

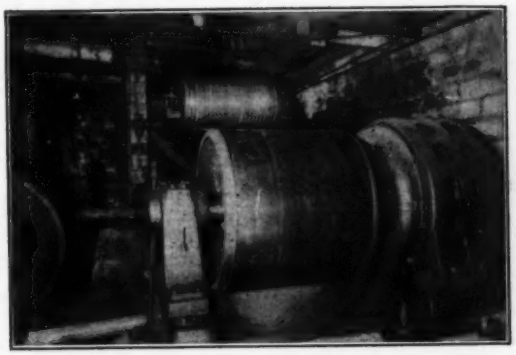
Newsprint
Catalog and Directory Papers
Fibre Wrapping Papers
Packers Oiled Manila
Specialties

General Sales Office

15 Broad St., New York

Farmers' Bank Bldg.
Pittsburgh, Pa.

RHOADS TANNATE WATERSHED BELTING



LITTLE STRETCH OR SLIP

But little of this 78-foot, 40-inch wide belt shows in our picture. It runs a line of beaters, Jordans, agitators and a stock pump on the floor above. It has been running nearly six years, and is in excellent condition.

It is one of a number of Rhoads Tannate Watershed Belts giving an exceptionally high degree of satisfaction in this mill. A report says "Although frequently overloaded, they show very little stretch and no slippage."

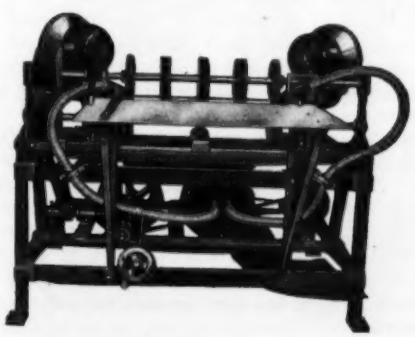
Rhoads Tannate Watershed Belts are always sold under the Rhoads Service Guarantee which leaves you to be the judge of whether your purchase is satisfactory.

May we have your order on this basis?

J. E. RHOADS & SONS

Philadelphia - 37 N. Sixth St.

New York—104 Beekman St. Atlanta—70 Forsyth St., S. W.
Chicago—24 N. Clinton St. Cleveland—1224 W. Ninth St.
Factory and Tannery, Wilmington, Del.



DECKLE EDGE MACHINERY

Double or Single Head

for

Deckle Edging — Beveling — Creasing
Sheets Cards

THE LESTER & WASLEY CO., INC.
Franklin at Chestnut
NORWICH CONN.

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power & Paper 5s, 1943	90	91
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	81	87
Bastrop Pulp & Paper 6½s, 1940	103	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 19337	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1929	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago, Debenture 6s, 1936	95	98
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	95	...
Champion Paper Corp. 6s, 1945	95	98
Container Corp. of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	90	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	80	...
Donnaconna Paper 5½s, 1948	93	...
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Irange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	100	...
Hawley Pulp & Lumber 6s, 1946	96	..
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
Itasca Paper & Prairie River Power Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Power Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	83	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Paper 6s, 1941	105	108
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	97	101
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6½s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1928-42	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Paper 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1942	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	101	104
St. Maurice Valley Corp. 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	102
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Paper 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1934	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	102	...
Waterway Paper Products 6s, 1931	100	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P. Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Ffd.	108	110
Diem & Wing, 7% Pfd.	92	97
Eastern Mfg. Co. 1st Pfd.	55	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	100	...
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	160	None Off.
Marathon Paper Mills, Com.	150	...
Mengel Co., Pfd.	102	104
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com.	195	...
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.	80	...
Richardson Co., Com.	170	...
Sabin Robbins Paper Co., 8% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off
West Virginia Pulp and Paper Company	55	57
West Virginia Pulp and Paper, Pfd.	100	101
Whitaker Paper, 7% Cum. Pfd.	105	None Off.

CONSTRUCTION NEWS

(*Continued from page 68*)

projects. Contract recently has been let through the Harlan Engineering Company, Montreal, to the General Electric Company, Canada, for four electric paper mill drives, of synchronous type, reported to cost about $225,000.

Bastrop, La.—The Continental Bag and Paper Corporation, a subsidiary of the International Paper Company, New York, has begun the construction of a new addition to its local kraft paper bag manufacturing plant, to be one-story, 100 x 200 feet, reported to cost more than $70,000. It will be used primarily for storage and distributing service.

Madawaska, Me.—Fraser Paper, Ltd., has engaged W. E. S. Dyer, Land Title Building, Philadelphia, Pa., mill engineer, to prepare plans for extensions and improvements in its local mill. It is understood that program will include the construction of additional units for enlarged output and remodeling of existing mill.

Beloit, Wis.—The Beloit Box Board Company, Second street, is reported to be considering a one-story addition to its mill and will soon select an engineer to prepare detailed plans. It is understood that work is scheduled to be placed under way during the summer.

Louisville, Ky.—New interests, headed by Warren D. Williams, 2813 Ginstread drive, Louisville, have acquired a controlling interest in the Southeastern Paper Company, 204-6 West Main street, and will assume active management at once. Plans are projected for general expansion in present operations, with increased distributing facilities. Mr. Williams will be president of the company. Alexander G. Hunter, Louisville, will also be an official of the reorganized company.

Watertown, N. Y.—The Eastern States Power Corporation, affiliated with the St. Regis Paper Company, Watertown, is disposing of a stock issue to aggregate about $6,000,000, a portion of the fund to be used for general expansion, particularly in connection with the acquisition of additional properties. F. L. Carlisle is president.

Lynchburg, Va.—The John H. Heald Company, affiliated with the Mead Paper Board Company, Dayton, Ohio, has filed notice of increase in capital from $5,500,000, to $6,000,000, for general expansion.

Detroit, Mich.—The Detroit Paper Products Company has filed notice of increase in capitalization to 60,000 shares of stock, no par value, for general expansion and development.

Philadelphia, Pa.—The John Boshart Paper Company, care of the Corporation Guarantee and Trust Company, Land Title Building, Philadelphia, has been incorporated under Delaware laws, with capital of $100,000, to manufacture and deal in paper products of various kinds.

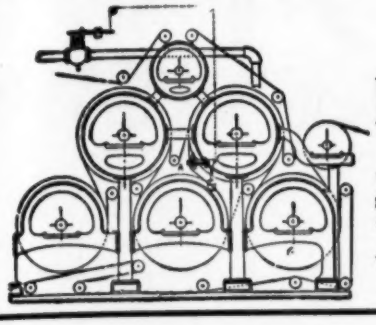
Glendale, Cal.—The West Coast Paper and Supply Company, Ltd., has been incorporated with a capital of $25,000, to deal in paper goods. The incorporators are L. A. Bowen and H. H. Wheeler, both of Glendale. The company will be represented by Frank C. Weller, 817 Board of Trade Building, Los Angeles, attorney.

Chicago, Ill.—The Chicago Paper Box Machine Works, Inc., 1038 North Ashland avenue, has been incorporated with a capital of $15,000, to manufacture box-making, folding and kindred machinery for paper box production. The incorporators are Charles Lutz and William Pauke.

The Pickles Drying Regulator

WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT



Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

QUALITY PULPS

"HAFSLUND BEAR"
Bleached Sulphite

"FORSHAGA"
Bleached Sulphite

"HURUM SPECIAL"
Extra Strong Kraft

"BAMBLE"
Extra Strong Kraft

Fresh Monthly Shipments—No Closed Winter Season

The Borregaard Company
Incorporated
200 FIFTH AVENUE NEW YORK, N. Y.

THE DRAPER FELTS

All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY
CANTON, MASS.
Woolen manufacturers since 1858

EASTWOOD
FOURDRINIER-CYLINDER-WASHER
WIRES

EASTWOOD WIRE CORPORATION, BELLEVILLE N.J. U.S.A.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 6, 1929.

Conditions in the local paper market are seasonal. Demand for the various grades of paper was moderately persistent during the past week. Sales forces of the leading paper organizations are conducting a strenuous campaign at present and an expansion of business is confidently looked for, in most quarters. No radical price changes have been reported and in most instances the schedule is being maintained.

Production of news print was maintained at about 74 per cent of total capacity. Advertising and circulation of the leading newspapers is reported to be running slightly ahead of 1928 so far this year and the outlook for the near future is fairly promising. Public announcement of the contract quotations for the current year is still anxiously awaited.

The paper board situation is unchanged. Most of the mills are operating at a fairly high rate, but prices are generally weak. Steadiness prevails in the fine paper market, while tissues are beginning to arouse more interest. Demand for the various grades of coarse paper is mostly routine, but an improvement in the situation is anticipated shortly.

Mechanical Pulp

Although ground wood production has been curtailed somewhat, due to weather conditions and other causes, offerings are about sufficient to take care of current requirements. Shipments against contract are moving at a satisfactory pace. Prices are generally holding to previous recorded levels and there is little talk of concessions around.

Chemical Pulp

Paper mill demand for both imported and domestic chemical pulp is well up to average for the time of the year. The sulphite grades are exceptionally firm and offerings at present are rather limited. Imported bleached sulphite is quoted at from $3.65 to $4.40, ex dock, Atlantic ports, while domestic bleached sulphite is selling at from $3.40 to $4.75, f.o.b. pulp mill.

Old Rope and Bagging

The old rope market is exhibiting a strong undertone. Demand for foreign and domestic manila is heavy and prices are steady to firm. Mixed strings are also moving in good volume. The bagging market continues rather quiet but prices of the various grades are holding to previously quoted levels, in most instances.

Rags

Some improvement was noticed in the domestic rag market. Cotton cuttings continue in excellent request. Roofing rags are moving in better volume. Offerings of mixed rags are somewhat scarce. Prices are being maintained at previously quoted levels. The lower grades of imported rags are fairly active but there is little improvement in the demand for higher grades.

Waste Paper

No radical changes were recorded in the paper stock market. The lower grades continue to move freely, folded news being particularly buoyant. Book stock is moderately active. Ledger stock is going forward with more regularity than of late. Old kraft machine compressed bales are in fair request. Prices on the various grades of waste paper are practically unchanged.

Twine

With Spring and Easter near at hand, the position of the twine market is quite healthy. Although the demand for the various grades was not particularly heavy during the past week there are signs of decided improvement in the near future. Quotations are generally holding up very well and reports of shading are infrequent.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 6, 1929.—The Government Printing Office has received the following bids for 23,100 pounds of 24x38—134, high quality rag or laid antique book paper: American Writing Paper Company, 16 cents per pound; Whitaker Paper Company, 14.92 cents; Old Dominion Paper Company, 18.94 cents; R. P. Andrews Paper Company, 18.4 cents; Barton, Duer & Koch Paper Company, 21.75 and 18.29 cents; Stanford Paper Company, 14 cents; Virginia Paper Company, 18.63 cents; Reese & Reese, Inc., 13.67 cents; Worthy Paper Company Association, 19 cents; Atlantic Paper Company, 26.5 cents; and W. D. Harper, Inc., 17.95 cents.

The Printing Office will receive bids on March 8 for 23,485 pounds (76,500 sheets) of 38x48—307, 75 per cent rag plate finish book paper.

Eddy Paper Corp.'s Profits Lower

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 4, 1929.—Profits of the Eddy Paper Corporation, of Milwaukee, Wis., a subsidiary of the Kieckhefer Container Company, were lower in 1928 than in 1927, according to an announcement of the company. The net income for the year ended December 31, 1928, was $136,815, equal to 83 cents a share on 165,000 shares of no par common stock. This is less than half the earnings of 1927, when the net was $317,748, or $1.93 a share, based also on 165,000 shares. Operating income for 1928 was $556,104, compared to $860,472 in 1927, and total income was $601,735 against $928,935 the year before. The company has plants at Milwaukee, and at Three Rivers and White Pigeon, Mich.

A. P. W. Paper Co. Statement

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., February 23, 1929.—The annual report of the Albany Perforated Wrapping Paper Company for the quarterly period ending December 31, 1928, shows a profit of $23,688 after depreciation, interest, etc., compared to a gain of $32,563 in the preceeding three months. The income account for the quarterly period ending December 31, 1928, is as follows: Gross sales, $1,035,480; cost of sales, $706,202; gross profit $329,278; other income $1,542; total income $330,820; depreciation $12,705; general administrative expenses $226,570; net loss Canadian Company $17,814; interest $50,043; profit before federal taxes $23,688.

Brief Presented by Edwin B. Ericksen

It was stated in last week's issue of the PAPER TRADE JOURNAL that Howard A. Atterbury, president of the association of American Wood Pulp Importers, presented the brief at Washington asking that wood pulp be retained on the free list. Mr. Atterbury was scheduled to present the brief, but was unable to do so and it was presented by Edwin B. Ericksen. Orval A. Wales is president of the association of American Wood Pulp Importers.

GEORGE SHEVLIN AND
The TRIMBEY-SHEVLIN "Junior"

This "Junior" screens 40 tons G. W. using .065 plates using but 15 H.P. The TRIMBEY-SHEVLIN "Senior" handles 80 tons with 25 H.P.

TRIMBEY MACHINE WORKS
Glens Falls, N. Y.

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Purity 99½%

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Pressure Pipe That Never Bursts. Built in sizes 1 inch to 48 inches.

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In Accordance with T. A. P. P. I. Standard Methods

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INCREASE MILL PRODUCTION
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REDUCE STEAM COSTS

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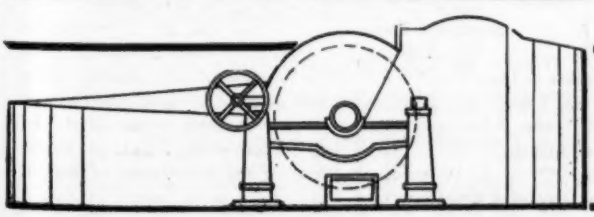
FULTON ENGINEERING CO.
MIDDLETOWN, OHIO
WESTERN REP.—Woodbury & Wheeler Co., Portland, Oregon

Ham Feltz says:

"You can always spot a real paper maker by the way he handles the little things. Must be the same way in making felts. It's always been my observin' that these here Hamilton Felts take out more water and wear longer than any felts I ever got hep to. I guess that's because the same two families have been making them for nigh on to 70 years. They know how."

Hamilton Felts



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Leo Shlick Engineering Co 314 Beacon St. BOSTON, MASS.

Also: Licenses, parts and castings to mills.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 6, 1929.

BLANC FIXE.—Conditions in the blanc fixe market are practically unchanged. Demand for both the pulp and the powder is mostly seasonal. The pulp is still quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness continues to prevail in the bleaching powder market. The contract movement is well up to average. Prices are generally holding to schedule and there is not much talk of concessions around. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds.

CASEIN.—No radical changes were reported in the casein market. Prices remain unaltered. Domestic casein is quoted at from 16½ cents to 17 cents per pound, while standard ground imported is still selling at 16½ cents per pound and finely ground at 17 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is exhibiting a strong undertone. Contract shipments are moving in heavy volume. Prices are steady to firm. Solid caustic soda is quoted at from $2.90 to $2.95 while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds.

CHINA CLAY.—Demand for china clay is persistent. Supplies are moving into consumption in a normal manner. Prices are holding to previously quoted levels. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Paper mill demand for chlorine is showing signs of improvement. Shipments against contract are moving regularly. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market was practically unchanged. At the naval stores, the grades of gum rosin used in paper mills are now quoted at from $8.75 to $9.40 per 280 pounds, ex dock, in barrels. Wood rosin is still selling at from $7.20 to $8.00 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Production of salt cake is being maintained in heavy volume, to take care of the prevailing heavy demand. Contract shipments are moving at an excellent pace. Salt cake is still quoted at from $16 to $18 per ton, while chrome salt cake is selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Business in the soda ash market is satisfactory. Withdrawals against contract are proceeding in normal volume. Prices are holding to previously quoted levels. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The starch market is moderately active. Offerings are about large enough to meet current requirements. Prices rule steady and unchanged and shading is infrequent. Special paper making starch is still quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds.

SULPHATE OF ALUMINUM.—Shipments of sulphate of aluminum are going forward in good volume and the market is exhibiting a strong undertone. Prices are unchanged. Commercial grades of sulphate of aluminum are quoted at from $1.40 to $1.55, and iron free from $1.95 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Offerings of sulphur are being freely absorbed by the paper mills. Prices remain unaltered. Sulphur is quoted at $18 per ton, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and nearby car loads, the quotation is $21.

TALC.—While trading in the talc market was only moderately active during the past week, improved conditions are anticipated in the near future. Prices continue steady. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines, while imported talc is selling at from $18 to $20 per ton.

Market Quotations

Paper

(F. o. b. Mill)		
Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	Nominal	
Rolls, transient	Nominal	
Sheets	Nominal	
Side Runs	Nominal	
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.00	@ 4.25
Southern	3.75	@ 4.00
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	37.50	@45.00
Straw	52.50	@55.00
Chip	35.00	@42.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip.	47.50	@52.50
Wood Pulp	80.00	@85.00
Container	52.50	@55.00
85 Test Jute Liner	52.50	@55.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00
(F. o. b. Mill)		
No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.40
Easy Bleaching	2.75	@ 2.90
No. 1 strong unbleached	2.50	@ 2.80
Mitscherlich unbleached	2.55	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.50	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	375	@ 3.85
(F. o. b. Pulp Mill)		
Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.50
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.15	@ 3.30
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.15	@ 2.30
French Blue Linens	2.65	@ 2.75
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.10	@ 2.20
Checks and Blues	1.80	@ 1.90
Lindsay Garments	1.80	@ 1.85
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.50	@ 1.55
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.60	@ 1.70
Bright Bragging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.35	@ 3.65
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.70	@ 1.80
Overissue Mag.	1.70	@ 1.80
Solid Flat Book	1.65	@ 1.75
Crumpled No. 1	1.15	@ 1.25
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.70	@ 1.80
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
Manilas—		
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.60	@ .65
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.75	@ 1.85
News—		
No. 1 White News	1.70	@ 1.75
Strictly Overissue	.85	@ .95
Strictly Folded	.65	@ .70
No. 1 Mixed Paper	.45	@ .50
Common Paper	.30	@ .35

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American made for American Trade

H. T. BRAND COATING CLAY

and

High Grade Filler Clay

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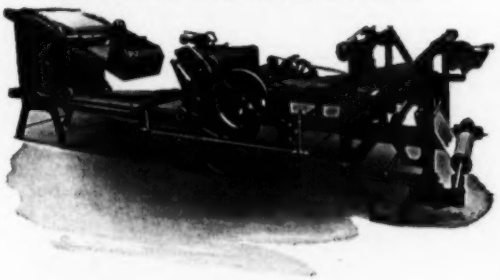

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Twines

F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.34
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton— (Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined— (Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.45
White Env. Cuttings	2.50	@	2.55
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.80	@	.85
Ledger & Writings	1.55	@	1.65
Solid Books	1.40	@	1.50
Blanks	1.50	@	1.65
Krafts	1.70	@	2.00
New Kraft Cuts	2.30	@	2.35
Manila Envelope Cuttings	1.75	@	1.90
Ex. No. 1 Manila	1.40	@	1.50
Print Manila	.85	@	.90
Folded News (overissue)	.70	@	.80
Old Newspapers—			
No. 1	.75	@	.80
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.65	@	.70
Roofing Stocks— (F.o .b Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.10	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	.20	@	.22
Fine	.18	@	.26½
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.10	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
News	.03½	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.05½
Manila No. 2	.03¾	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03	@	.03½
Straw Board	52.50	@	75.00
News Board	37.50	@	40.00
Chip Board	30.00	@	38.00
Wood Pulp Board	85.00	@	95.00

(Carload Lots)

Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	53.00	@	55.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.83	@	2.08

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.08½	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Fancy			
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.50	@	2.60
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.45	@	1.55
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.65	@	.70
Straw Board, Chip	.65	@	.70
Binders Board, Chip	.65	@	.70
Overissue News	.85	@	.90
Old Newspaper	.65	@	.70

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2—			
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05½	@	.06½
No. 2 Kraft	.03¾	@	.04½
Common Bogus	.02	@	.02¾
Delivered New England points			52.50
Straw Boards, rolls .009			
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard Bender	67.50	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00

(F. o. b. Mill)

Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.50	@	2.60
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.15	@	1.20
White Blank News	1.60	@	1.65
Old Kraft	1.85	@	1.90
Print Manila	.80	@	.90
No. 1 Mixed Paper	.55	@	.57½
Overissue News	.70	@	.85
Old Newspapers	.60	@	.65
Box Board, Chip	.55	@	.60

Bagging

(F. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	4.25	@	—
Domestic	4.00	@	—
Mixed Strings	.90	@	1.00
Jute Wiil Strings	—	@	1.00
Scrap Burlaps	1.25	@	1.35
Scrap Sisal	1.60	@	1.80
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	2.75	@	3.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06½
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06½	@	.06¾
New Black, soft	.04	@	.04¾
Khaki Cuttings	.04	@	.04¾
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.25	@	2.35
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15
Repacked	.02½	@	.02¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.55	@	1.60
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.10	@	5.50
New Checks & Blues	4.25	@	4.50
Old Fustians	1.90	@	—
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.70	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	11½	@	—
Fancy Shirt Cuttings	.05½	@	—

Friction at this point can be very expensive.

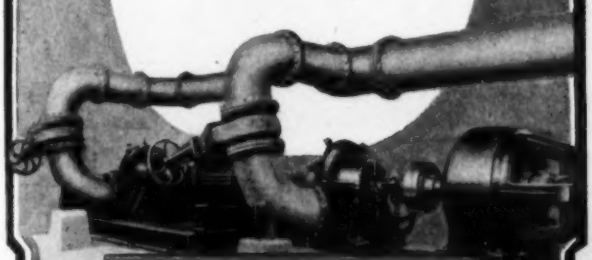
Solutions of Caustic Soda and similar chemicals will wash out the lubricant from ordinary packings that harden and cut the shaft.

CUTNO PACKING

carries in each separate strand a lubricant that successfully resists the cutting action of Caustic Soda and all alkali solutions.

To prevent the destruction of shaft friction use "Cutno" packing, that not only has an abundance of lubricant to overcome the usual shaft friction, but also resists the washing out tendency of the chemical solutions with which it comes in contact.

Let us send you a working sample to test out under your own conditions. State size of packing desired for test.



GREENE, TWEED & CO.
Sole Manufacturers
109 Duane St. New York

PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SEVENTH YEAR

Published Every Thursday by the
LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — J. BANNINGA, Secretary

Executive and Editorial Offices, 10 East 39th Street, New York
Chicago Office: 123 West Madison St.

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B-C Spiral Bevel Gear Drive

Several Steps Ahead of Anything You've Ever Seen

This drive embodies several advanced features, including an extra heavy double shell one-piece base to obtain rigidity and permit the use of jigs and other precision tools to secure perfect alignment of the shafts at exact right angles.

Another is the use of a balancing machine to obtain perfect balance and make the drive start easy, and run smoothly without vibration or noise.

These drives completely built at Black-Clawsons and tested by motor on shop floor. (See picture). Practical for all types of machines, easy to install.

Read the whole story in the February Messenger.